

2047

Tiger I

David Doyle

In Action®



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Don Greer 2010

Tiger I

Written by David Doyle

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(Front Cover) With its thick armor and big gun, the Tiger I was arguably the most feared tank of WWII. Steel-wheeled Tiger 007, assigned to schwere SS Panzer Abteilung 101 in France, was one of the last of the type.

(Back Cover) Tipping the scales at 60 tons, the Tiger weighed almost twice as much as the Allied Sherman, but was severely handicapped in off-road mobility by its 700-horsepower Maybach engine.



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(Title Page) The Tiger I is widely regarded as the most formidable German tank of World War II. This Tiger I Ausführung E (Ausf. E) exhibits most of the refinements of the type. The curves above the tow shackles on the exposed front ends of both side plates of the lower hull were a design revision introduced in December of 1943. A close inspection of the image reveals that this tank has the steel-tired, rubber-cushioned road wheels introduced in February of 1944.

Acknowledgments

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Introduction

The Tiger was perhaps the most feared tank of World War II. Portrayed as invincible by Nazi propaganda, the vehicle was indeed formidable. Nevertheless, the massive well-armed and well-protected tank suffered from automotive and maintenance deficiencies and its production taxed the German manufacturing base.

The development of the vehicle that was to become the Tiger I began in 1937. Daimler-Benz, Henschel, and M.A.N. all submitted designs for heavy tanks. Porsche became involved in late 1939. Ultimately the Daimler-Benz and M.A.N. designs evolved into the Panther, while the Porsche and Henschel designs led to the famed Tiger tank.

Henschel's original conception included a taper-bore, 7.5cm to 5.0cm Waffe 0725 main gun, but this was dropped because of the limited amount of the necessary tungsten available to German industry due to the war effort. Instead, the Henschel Tiger was armed with the Krupp-built turret with 8.8cm gun originally developed for the Porsche-designed vehicle. At this stage the vehicle became known as the VK4501 (H).

The Porsche and Henschel designs were then trialed against each other. From the outset, many people in high places, including Adolf Hitler himself, favored the Porsche design, but almost from the start of the trials the Porsche prototype failed to perform adequately. Nonetheless, Porsche received an order for 100 vehicles and testing continued.

Henschel was also awarded a contract for 100 production vehicles, and delivered the first four of them on 18 August 1942, with four more arriving later that month. They first saw combat near Leningrad (now St. Petersburg) on 16 September. The four Tigers of the 502nd Tank Battalion all returned from the fighting undamaged. Although all four were put out of action in their second engagement, overall the tanks' combat performance was regarded as successful and production forged ahead.

In October 1942 Albert Speer, Minister of Armaments and Munitions, set up an independent Tiger Commission to evaluate the competing designs. As a result of this evaluation, in November 1942 it was decided to complete the 90 Porsche vehicles remaining on order as Sturmgeschütze. These came to be known as the Ferdinand.

On 27 February 1944 Hitler banned the designation "Mark VI tank," instead ordering that the designation "Tiger Tank Ausführung E" "(Ausf. E)" be used. The last tank of this type was completed in August 1944.

As the engineering developed, the Tiger's projected weight continually increased, eventually necessitating the addition of another roadwheel to the design, outboard of the originally planned roadwheel stations. Incidental to this change was widening of the track from 520mm to 725mm, causing the vehicle to exceed railroad loading limitations. This problem was addressed by installing on the tank a second set of tracks, 520mm wide, known as "transportation tracks" (*Verladeketten*). The outer roadwheels and "operational" or "combat tracks" (*Marschketten*) were removed and the transportation tracks installed for rail shipment. Once offloaded, the process was reversed. It took an experienced crew about half an hour per side to switch between transportation and operational tracks.

These tanks had torsion bar suspension and, beginning in January 1944, after about the first 800 tanks had been produced, they were equipped with what are commonly known



The VK 45.01(P), also called the Tiger (P), was Porsche's answer to a July 1941 Wehrmacht requirement for a new heavy tank. Ultimately, Henschel would win the contract to produce that tank, which would come to be known as the Tiger I. Technicians confer on the rear deck of a VK 45.01(P) during tests at Döllersheim. (The Tank Museum)

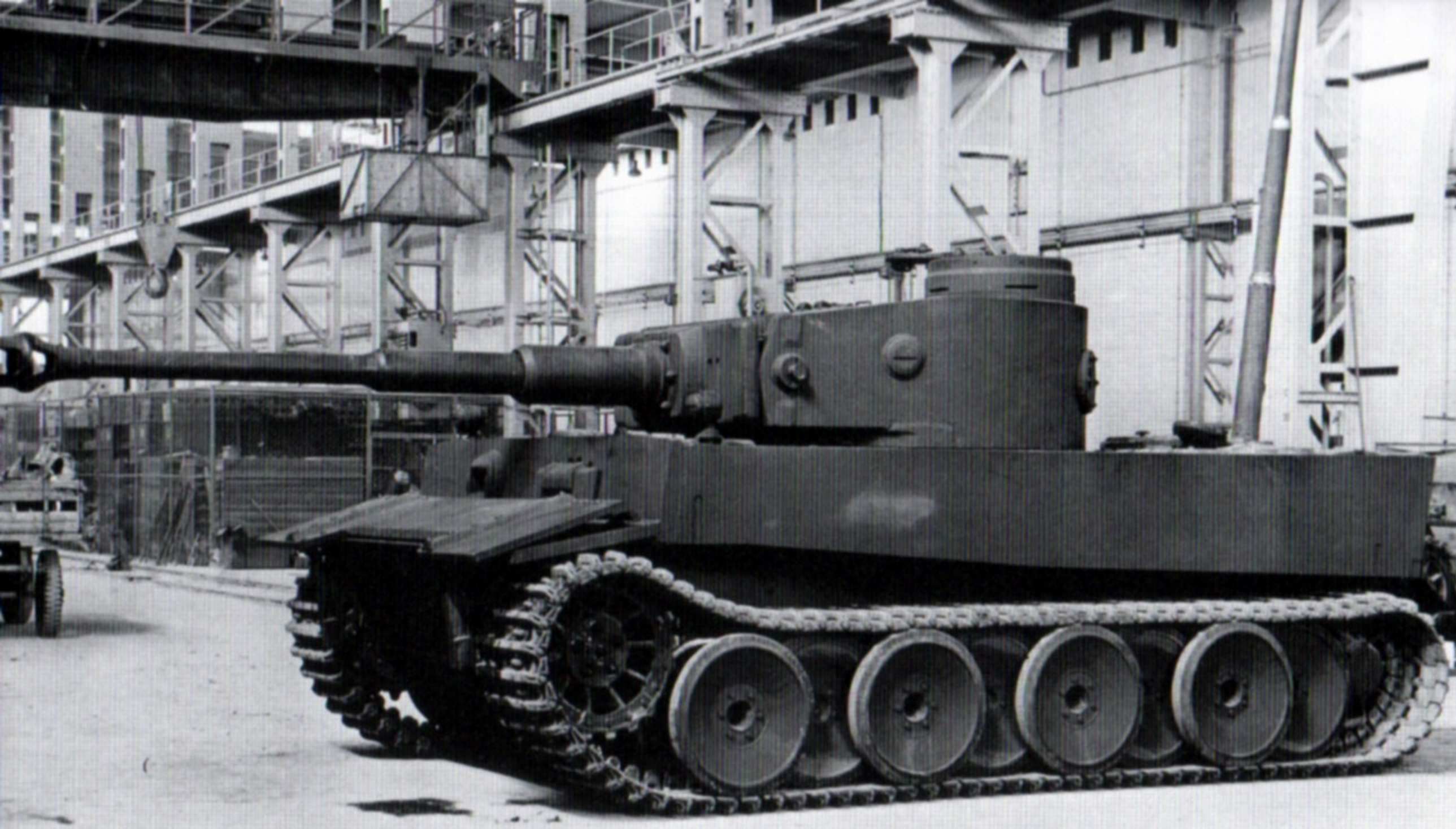
as steel road wheels. These wheels were based on a Soviet design found on captured tanks. Previously, the road wheels were constructed with a heavy rubber tire applied to a metal wheel, much like a forklift tire. The new design used a steel tire essentially isolated from the steel wheel by O-ring-type rubber cushions. When the new-style road wheels were introduced, the number of road wheels per axle dropped from three to two.

The first 250 Tigers were powered by the Maybach HL210P30 engine with a 21-liter 650-horsepower rating. Beyond the first 250 vehicles, the 23-liter Maybach HL230P45 engine, which had an additional 50 horsepower, was used.

Among the numerous improvements introduced after the building of 391 vehicles was a redesigned turret that included a new commander's cupola, based on that used on the Panther. A gun barrel clamp and an escape hatch were also introduced at this time. In July 1943 an improved cupola mounting for the MG34 antiaircraft weapon was installed.

Two months later the number of headlights on the Tiger was reduced to one. Of the 1,346 Tiger I tanks produced, the final 54 were unique. The majority of these vehicles were actually extensively rebuilt. Under this project, the tank hulls were salvaged from damaged vehicles that were unrepairable, but 22 new turrets had to be built. Tiger I production, which had begun in August 1942, ceased in August 1944.

The Tiger was well armed and well protected, but its great weight (56 tons) pushed the limits of its suspension and powertrain. Very probably, more Tigers were destroyed by German forces after running out of fuel or spares than were knocked out in action by Allied tanks. This fact, however, should not be construed to mean the Tiger was invulnerable. Allied forces learned that their tanks could deal with the Tiger, but to do so required skill and cunning rather than a simple duel.



Designed by Henschel, the first Tiger prototype, the VK 45.01 (H), was completed in April 1942. It featured a Krupp hull and a turret similar to that of the VK 45.01(P), fitted with an 88mm KwK 36 gun. The vehicle had an experimental Vorpanzer (frontal shield) that could be lowered to protect the tracks and hull front. (The Tank Museum)

This early Tiger I lacks the side mud guards and their mounting points that would become standard in August 1942. At the top of the tow lugs on the forward portion of the extended hull side plates are notches intended to provide clearance for the Vorpanzer. The plates were fabricated before the concept of the Vorpanzer had been abandoned.



The first Tiger prototype, chassis number V1, is viewed here from the front, with the Vorpanzer folded on the glacis. On each side of the Vorpanzer is an operating arm pinned to a hole in the extension of the side of the hull. Ultimately, it was deemed that the Tiger's 100mm hull armor was adequate and the Vorpanzer concept was abandoned. Headlights were originally mounted on top of the Tiger hull in the locations shown in this photograph. (The Tank Museum)

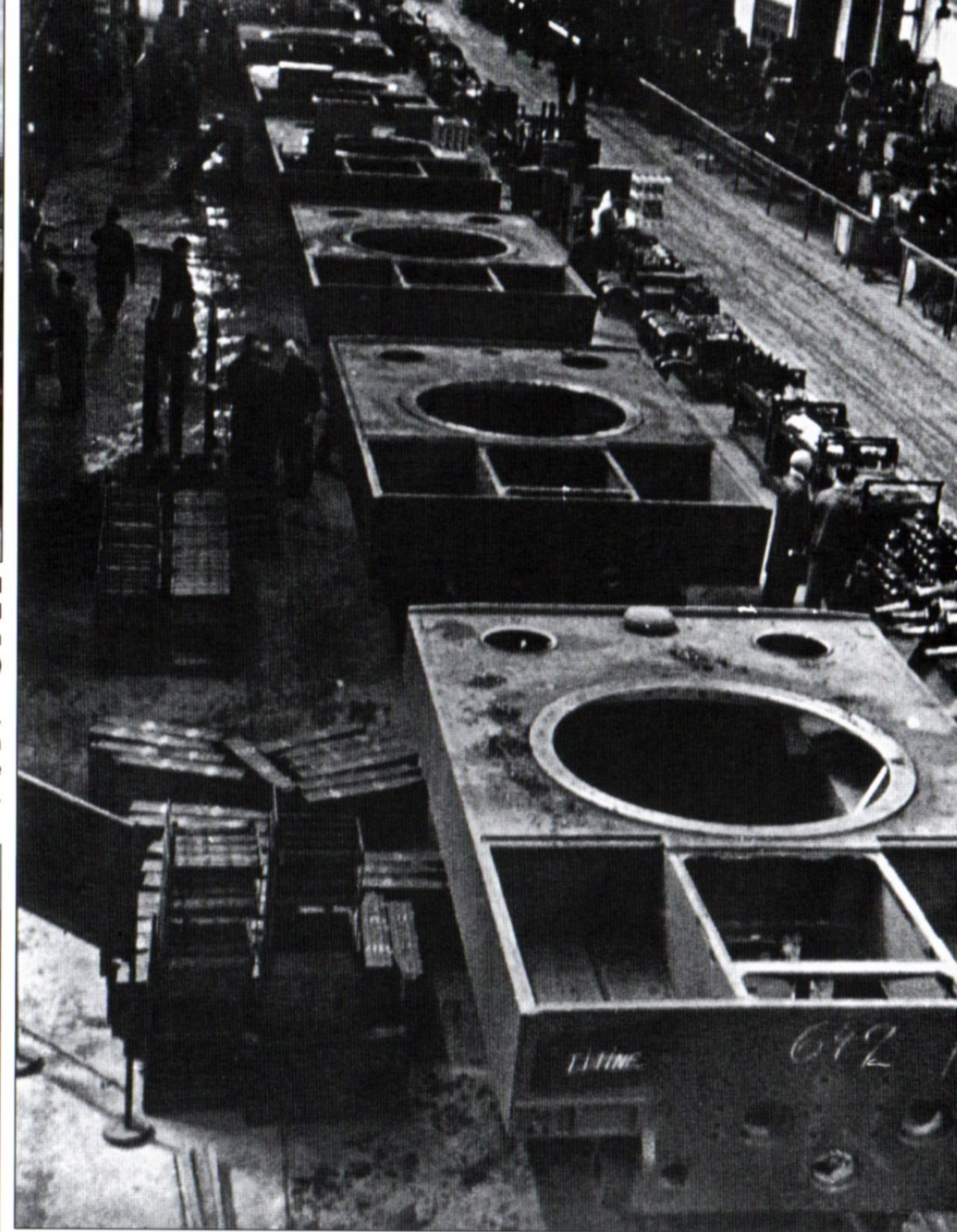
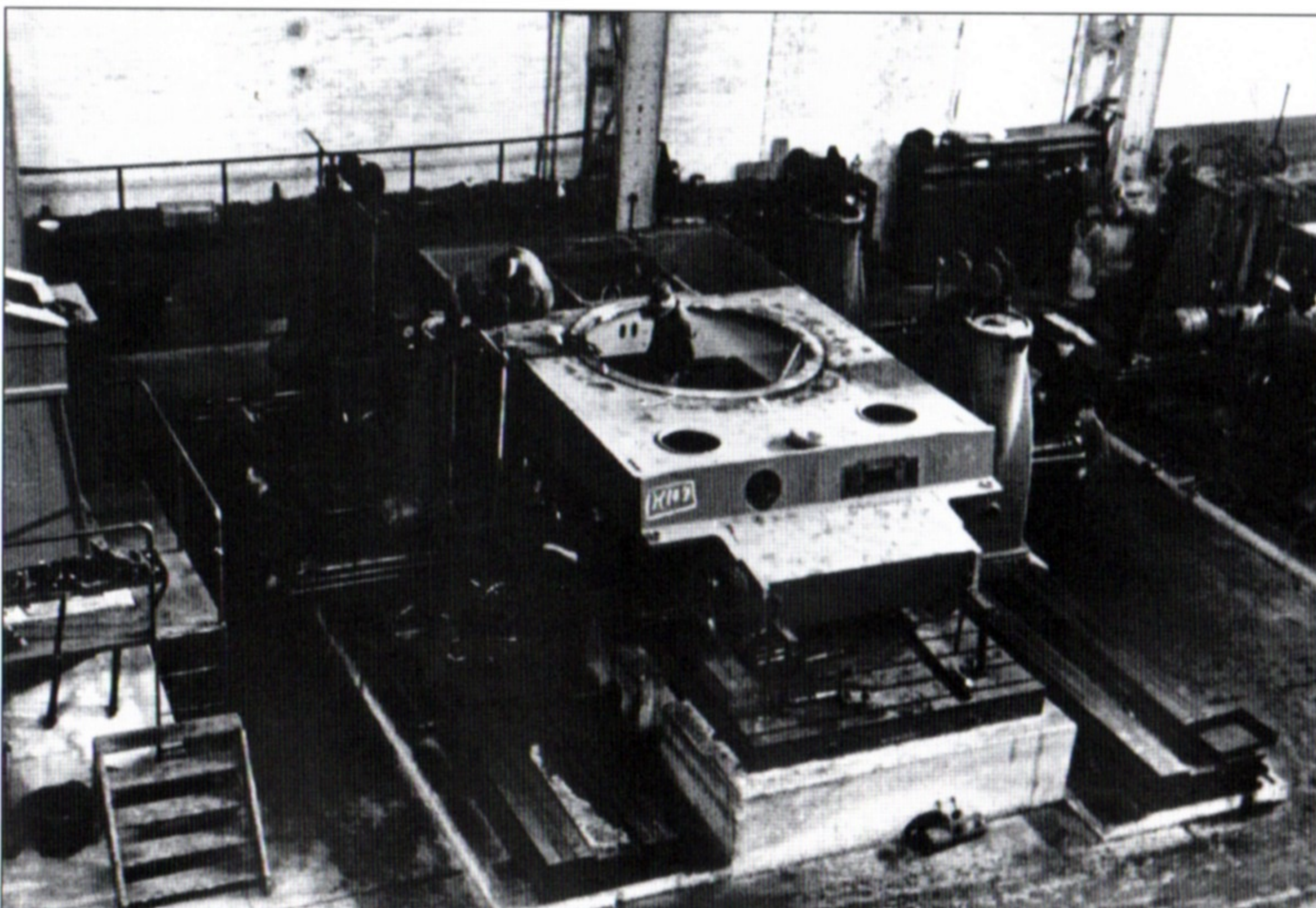
Panzerkampfwagen VI Ausf. E (Tiger)

Length	8.45 meters (27 feet, 8 5/8 inches)
Width	3.70 meters (12 feet, 1 5/8 inches)
Height	2.93 meters (9 feet, 7 3/8 inches)
Fuel capacity	540 liters (143 US gallons)
Maximum Speed	38 kilometers per hour (24 miles per hour)
Range, on road	125 kilometers (78 miles)
Range, cross country	80 kilometers (50 miles)
Crew	5 men
Communications	Funkgerät 5 (FuG 5) radio
Engine make	Maybach
Engine model	HL210P45 or HL230P45
Engine configuration	V-12, liquid cooled
Engine displacement	21.0 liters for HL210P45 / 23.0 liters for HL230P45
Engine horsepower	650 for HL210P45 / 700 for HL230P45

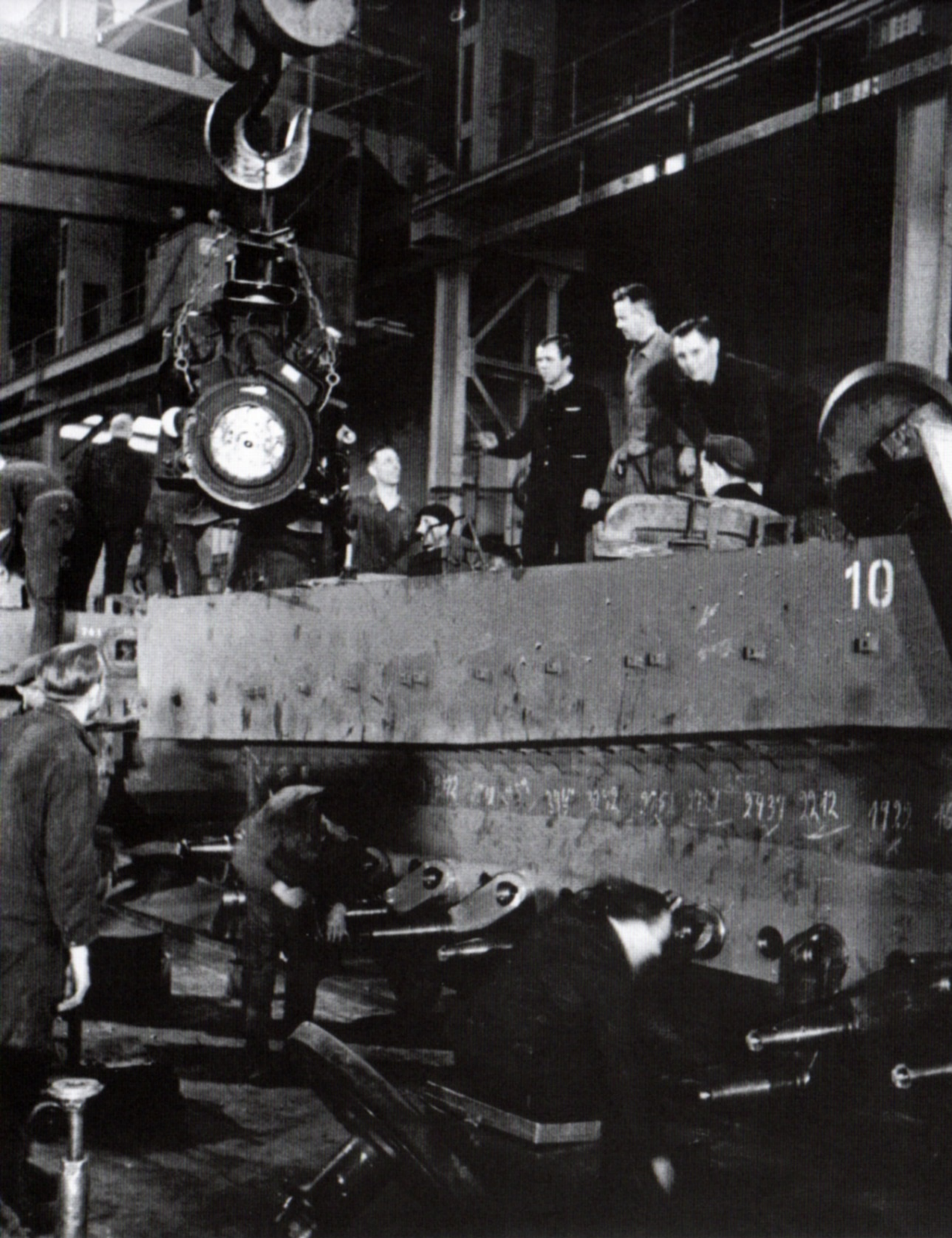


Following the completion of the first Tiger I prototype in April 1942, production started off slowly, with only one example, chassis number 250001, in May 1942, being finished before production finally began to advance slowly that August. Here, the turret ring on the partially completed hull of a Tiger (right) is being precision milled. (Patton Museum)

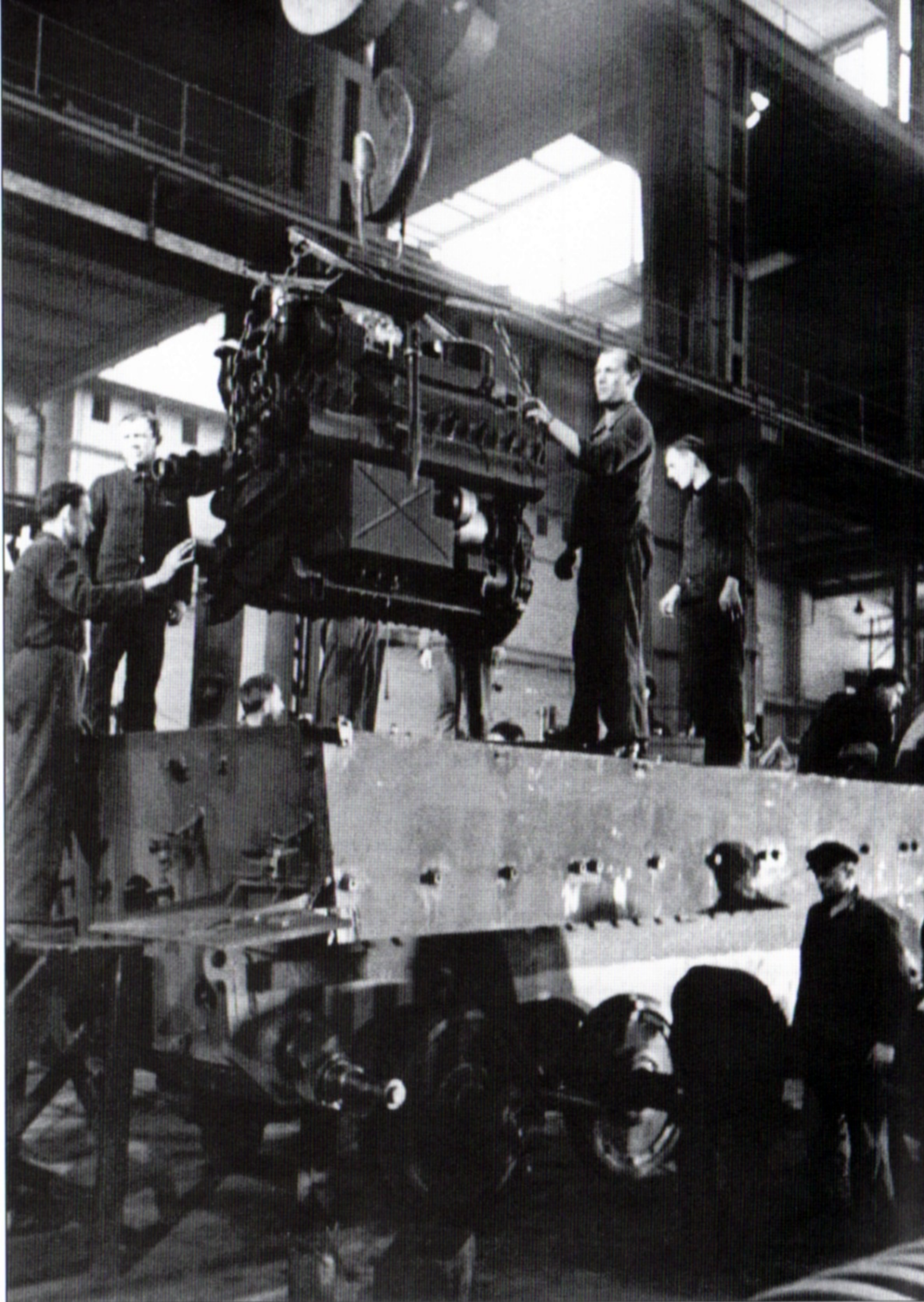
A Tiger I hull is under construction in Shop 3 at Henschel's Mittelfeld Werkes plant. Several large, horizontal, six-spindle borers are cutting openings for the suspension components. The openings for the driver's visor, the front machine gun, and the hatches for the driver and radio operator/front machine gunner are already present. (Patton Museum)



Tiger hulls line up on the Henschel production line in Shop 5, where final assembly takes place. Yet to be installed are the Maybach engines, the radiators, blowers, and fuel tanks in the compartments flanking the engine compartments. Suspension components appear to be stacked on the floor to the right of the hulls. (Patton Museum)



In Shop 5, an overhead crane lowers a Maybach engine into the engine compartment. Meanwhile, workers are installing bogie arms onto the torsion bars. On the side of the hull, the mounting points for the mudguards have been attached. Chalk was used to lay out location points and was wiped off when no longer needed. (Patton Museum)



Workers guide a Maybach HL210P45 engine slowly and carefully into the tight confines of the engine compartment. The HL230P45 engine replaced the HL210P45 in May 1943. Soon after the adoption of the HL230P45, improvements were made to reduce the compression ratio and correct problems with blown head gaskets. (Patton Museum)

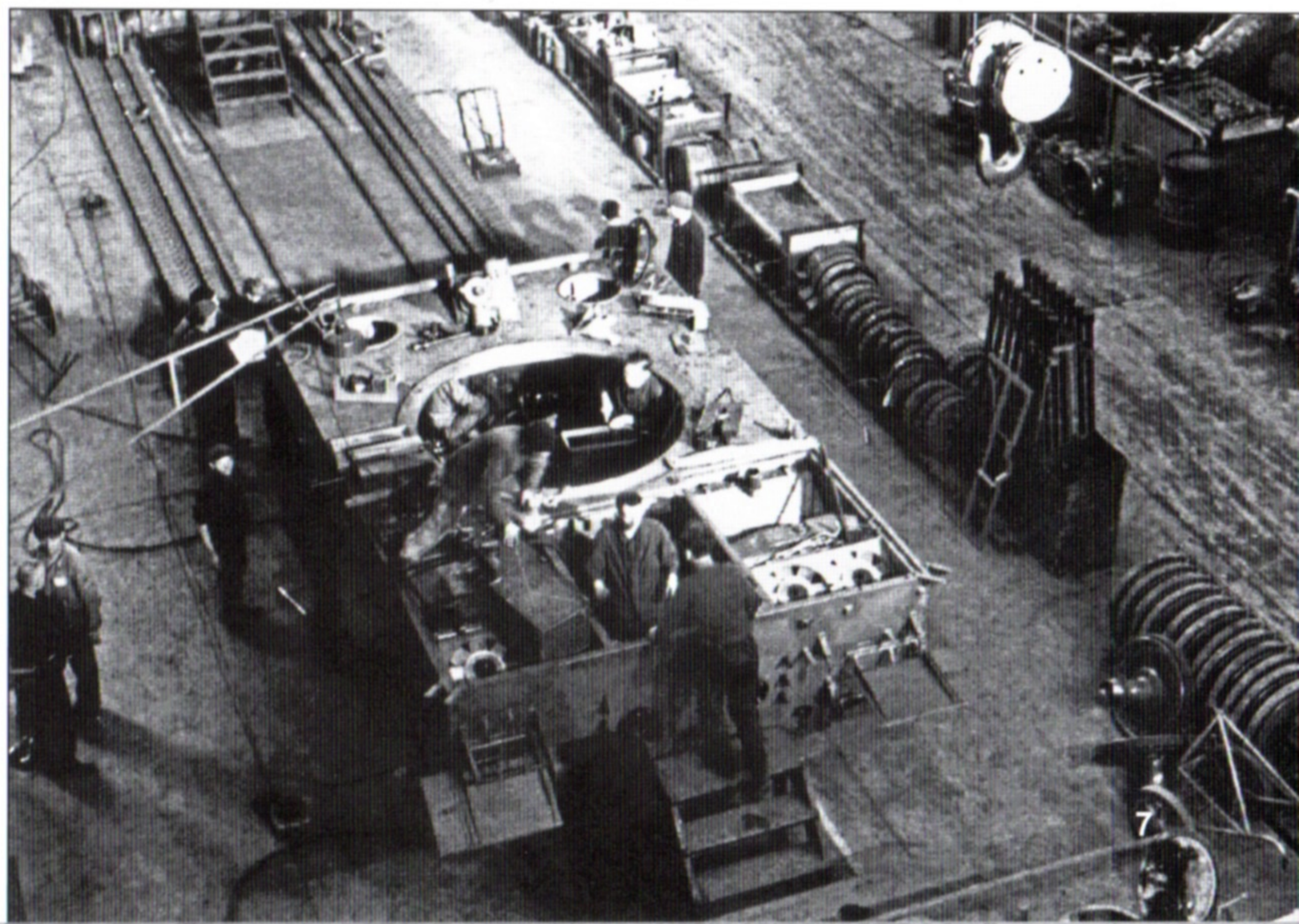


The HL210P45 engine, used on Tigers up to chassis number 250250, is shown from the front end. It was a V-12, water-cooled, 21-liter engine that could develop a maximum of 650 horsepower at 3,000 rpm. On top of this engine model were three cylindrical air cleaners mounted on a manifold. A wheel has been installed on the rear bogie arm. (Patton Museum)



A welder fastens safety clips to a bogie wheel. A large number of bogie wheels was needed to distribute the massive weight of the tank. Because of the overlapping arrangement of the wheels, changing an inner wheel required removing up to 14 bogie wheels. There is a seam at the center periphery of each rubber tire. (Patton Museum)

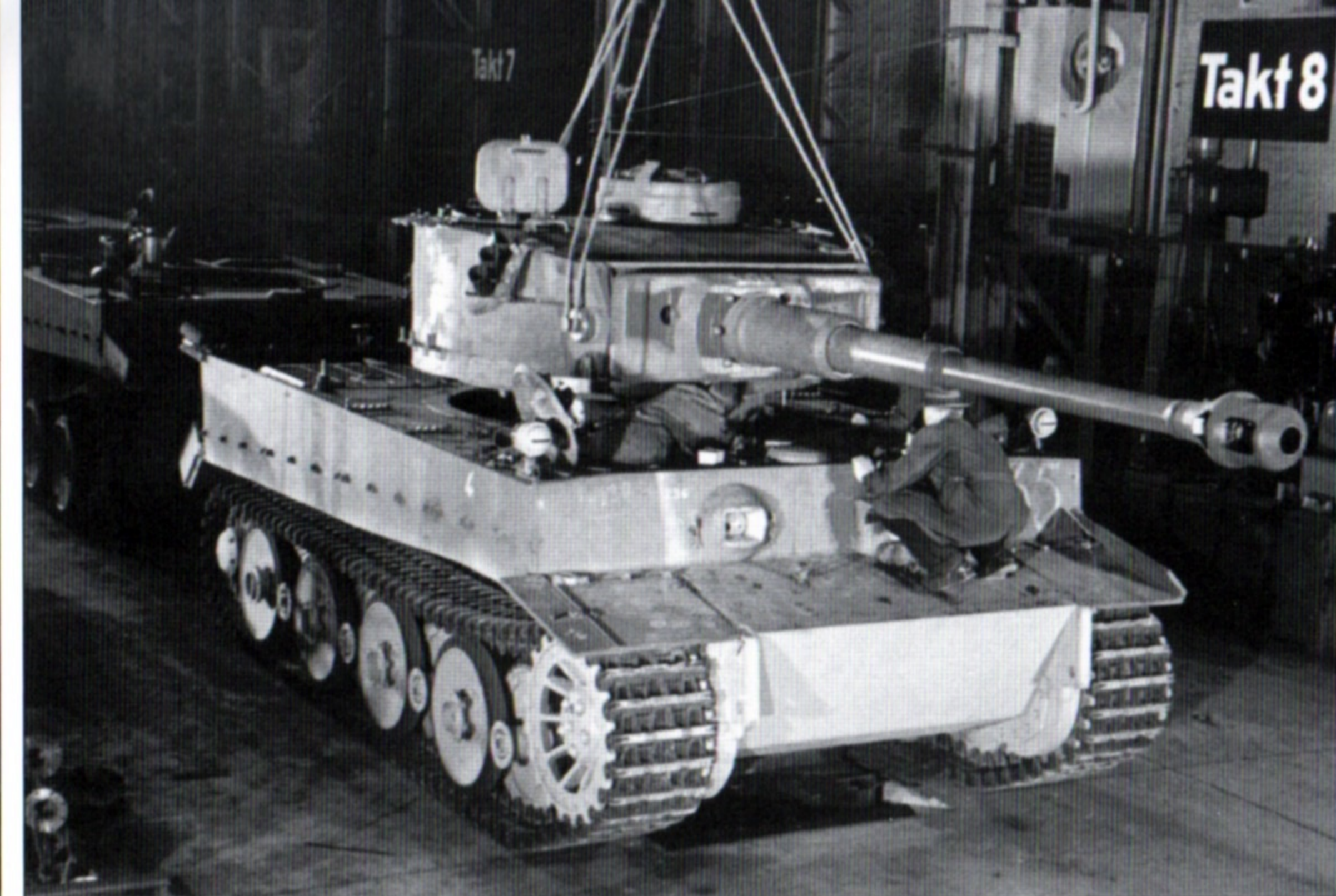
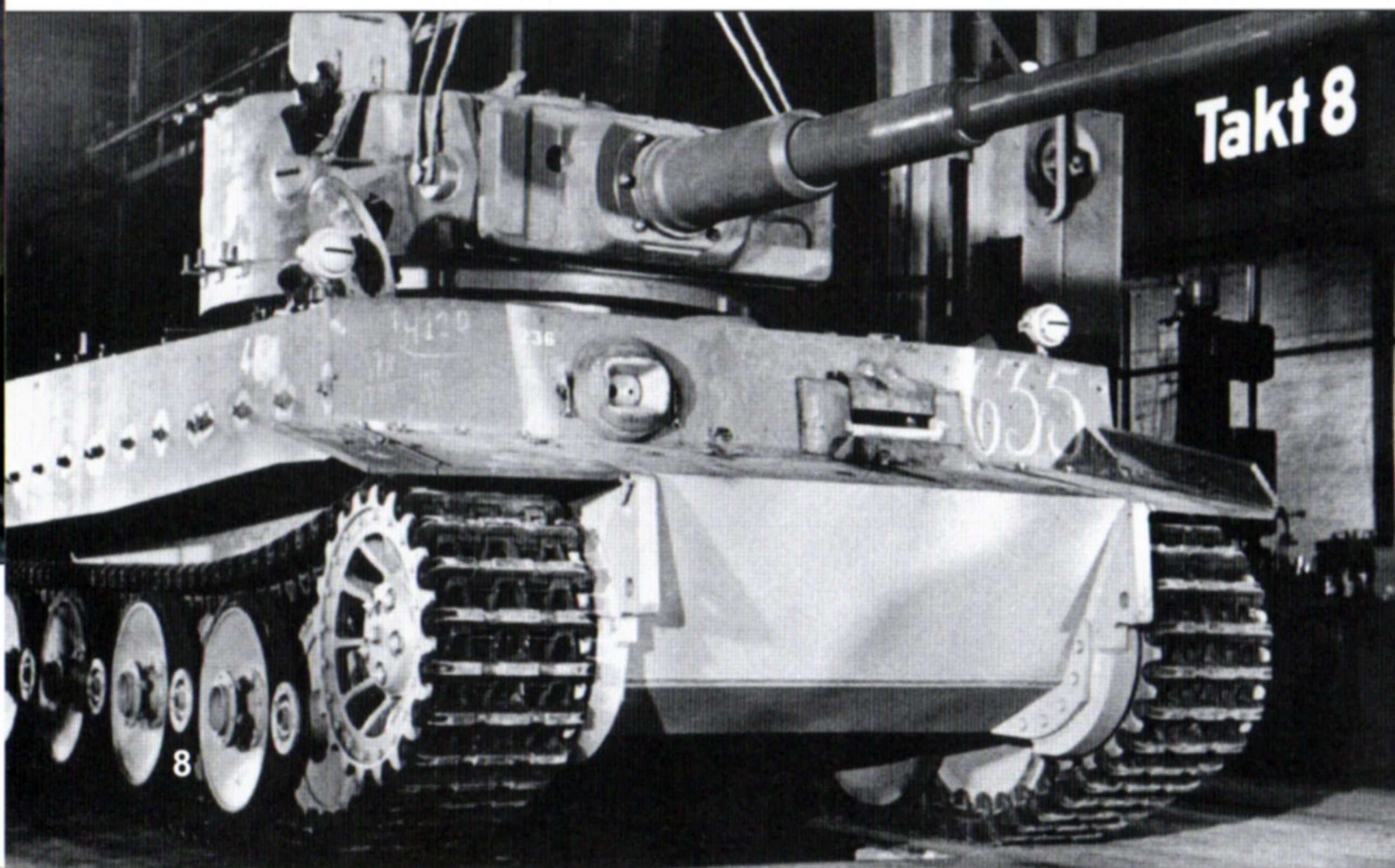
A Tiger I hull is under construction. Radiator fans are visible just inside the rear of the hull. The engine has not yet been installed, as a workman is standing in the engine compartment, and a man inside the hull is working on the transmission. To the lower right are bogie wheels, and to the front of the hull, track assemblies are stretched out.





Following the installation of the transport tracks and painting of the lower hull, the chassis would be taken for a test drive and then brought to Shop 5 for final assembly. Here, the turret is being lowered onto a hull. Lifting cables are affixed to three lifting lugs on the turret: two on each front side and one at the center rear. (Patton Museum)

Components on this almost-finished early-production Tiger I exhibit varying shades of paint or bare metal. The base color is visible on the front machine gun ball mount, the opening of the driver's visor, and headlights. Behind the tank's right headlight is a single-tube Schrapnellmine (S-mine) launcher, five of which were mounted on the vehicle.



The turret has only about one foot left to go before it is seated securely in the turret ring. The extent of the painting of the lower hull is evident; Tigers were painted Dunkelgrau (dark gray: RAL 7021) at the factory until February 1943, after which they were painted Dunkelgelb (dark yellow: RAL 7028), as this one appears to be. (Patton Museum)

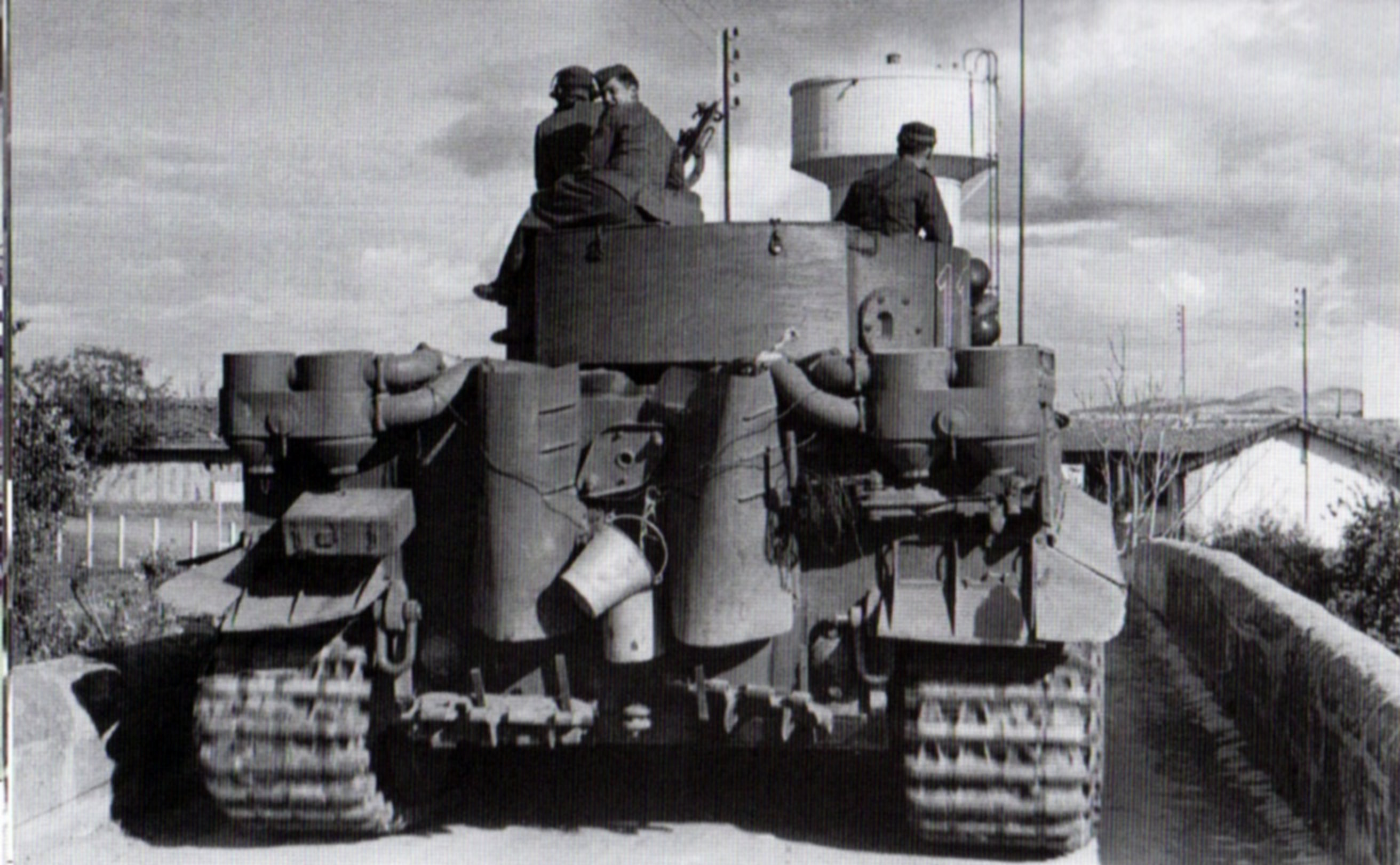
The Tiger in the foreground is complete and ready to be turned over to its assigned crew, which received training on this powerful new tank at the factory. The entire tank is now painted. Dust/moisture covers are fitted over the muzzle of the 88mm gun and the ball machine gun, and a shovel is stowed on the glacis. (Patton Museum)



Tunisia: schwere Panzer Abteilung 501



One of the Tigers of the 1st Company, schwere Panzer Abteilung 501, crosses a bridge *en route* to the barracks at Manûbah, a suburb of Tunis. This battalion served in Tunisia from November 1942 to March 1943 and was credited with destroying approximately 150 Allied tanks.



Tiger I, tactical number 111, of the 1st Company, schwere Panzer Abteilung 501, crosses a bridge *en route* to Manûbah, Tunisia. It features early-style muffler heat shields and Feifel prefilters, a track-tool box (left), jack (right), two spare track links (bottom) and, above the buckets, an early-style engine-starter attachment. (Patton Museum)

In Tunisia, an SdKfz 251/7 half-track follows a Tiger I along a rocky road. Visible on the rear of the Tiger's hull are angular muffler shields, an early version of this fixture that was characteristic of the Tigers of schwere Panzer Abteilung 501. Also noticeable are the Feifel air prefilters.



A captured U.S. M2 half-track with a U.S. 1-ton trailer in tow follows a German Tiger I tank of schwere Panzer Abteilung 501 in Tunisia in 1943. In the trailer are several spare Tiger bogie wheels. Because of war shortages, the Germans were happy to place serviceable captured vehicles to use.

A heavy motorcycle with sidecar passes Tiger 142 of the 1st Company, schwere Panzer Abteilung 501, in Tunisia. Between the hinge straps of the left rear mud guard is a cylindrical convoy light, to the right of which is the track-tool box. A bucket is hooked to the jack below the right Feifel prefilters.





Tiger tactical number 121 of schwere Panzer Abteilung 501 exhibits the headlight brackets peculiar to that battalion's Tigers. The headlight cables were quite exposed. The thin vertical rod protruding from the left side of the turret roof was a direct-sight post, installed on some Tigers of that battalion.

This Tiger I was abandoned along a road in Tunisia. The upper corner of the right side of the mantlet adjacent to the coaxial machine gun aperture was struck by a projectile. On the 88mm gun barrel to the rear of the muzzle brake is the barrel sleeve, which evidently was blown off its mounting bolts on the mantlet. (Armor Plate Press)



Previously assigned to schwere Panzer Abteilung 501, this Tiger wears tactical number 724 (red with white outline) after being reassigned to the 7th Company, 7th Panzer Regiment, (10th Panzer Division) toward the end of the Tunisian Campaign. Local inhabitants are invited to take a close look at the tank.

Toward the end of the North Africa Campaign, the remaining Tiger tanks of schwere Panzer Abteilung 501 were assigned to the 10th Panzer Division. This Tiger, tactical number 732, of the 7th Company, 7th Panzer Regiment, (10th Panzer Division), was formerly tactical number 132 of the 501st Battalion.





Tiger I, tactical number 142, of schwere Panzer Abteilung 501 proceeds along a trail in Tunisia, its 88mm gun barrel wrapped with camouflage net. The headlight mounts of this battalion's Tigers were unique, comprising brackets of welded construction bolted to the glacis. The electrical cables for the headlights were highly exposed. (Patton Museum)

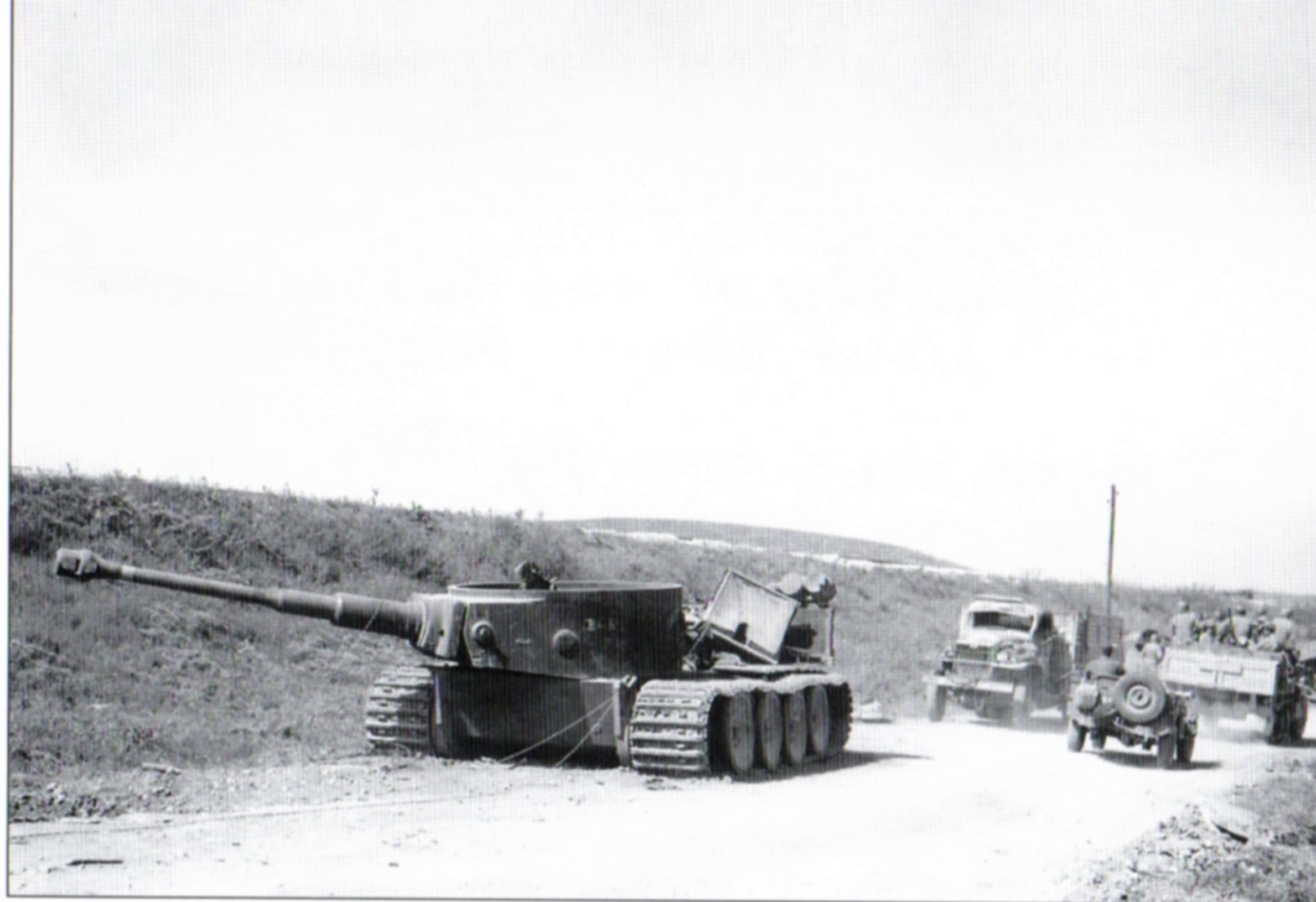
This Tiger I Ausf. E, tactical number 142, served in Tunisia with the 4th Platoon, 1st Company, schwere Panzer Abteilung 501. Camouflage netting is draped over the rear of the hull. To the left is a PzKpfw III; these tanks operated in concert with Tiger tanks in the heavy Panzer battalions, providing covering fire and flank protection. (Patton Museum)



Residents of Tunis, Tunisia, get a look at Tiger tactical number 142 of schwere Panzer Abteilung 501. Configured for shipment, the Tiger is fitted with narrow transport tracks, while its side mudguards and outer bogie wheels have been removed. The muzzle brake of the 88mm main gun has been temporarily removed as well. (Patton Museum)

The Germans scuttled these two Tigers, tactical numbers 823 and 833, of the 8th Company, 7th Panzer Regiment, after the tanks were disabled near Bâjah ("Béja"), Tunisia, and captured by the British. The tanks had formerly served with schwere Panzer Abteilung 501. The forces of the explosions blew the turrets off. (National Archives)



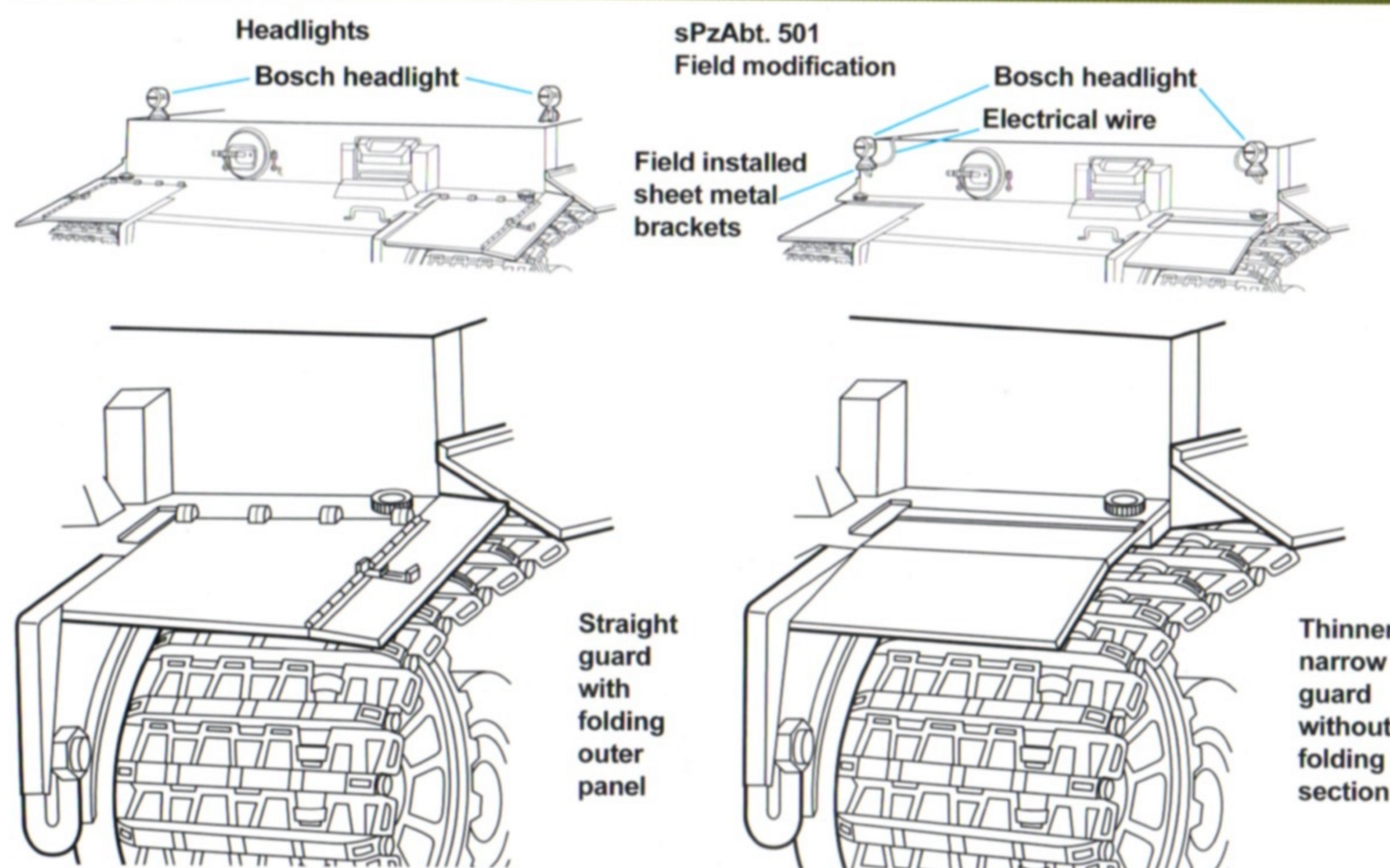


Abandoned along a road in Tunisia, this Tiger I tank was demolished with such force that the turret landed upside-down on the front of the hull. The side of the upper hull was blown off, and the suspension collapsed. Painted on the barrel of the 88mm gun near the muzzle brake are five rings signifying kills. (National Archives)



GIs pick through the wreckage of two Tigers destroyed near Bâjah ("Béja"), Tunisia, during Operation Ochsenkopf. The two pairs of vertical posts attached to the glacis were designed to hold three links of spare track against the plate in front of the driver's and front gunner's compartment. (Armor Plate Press)

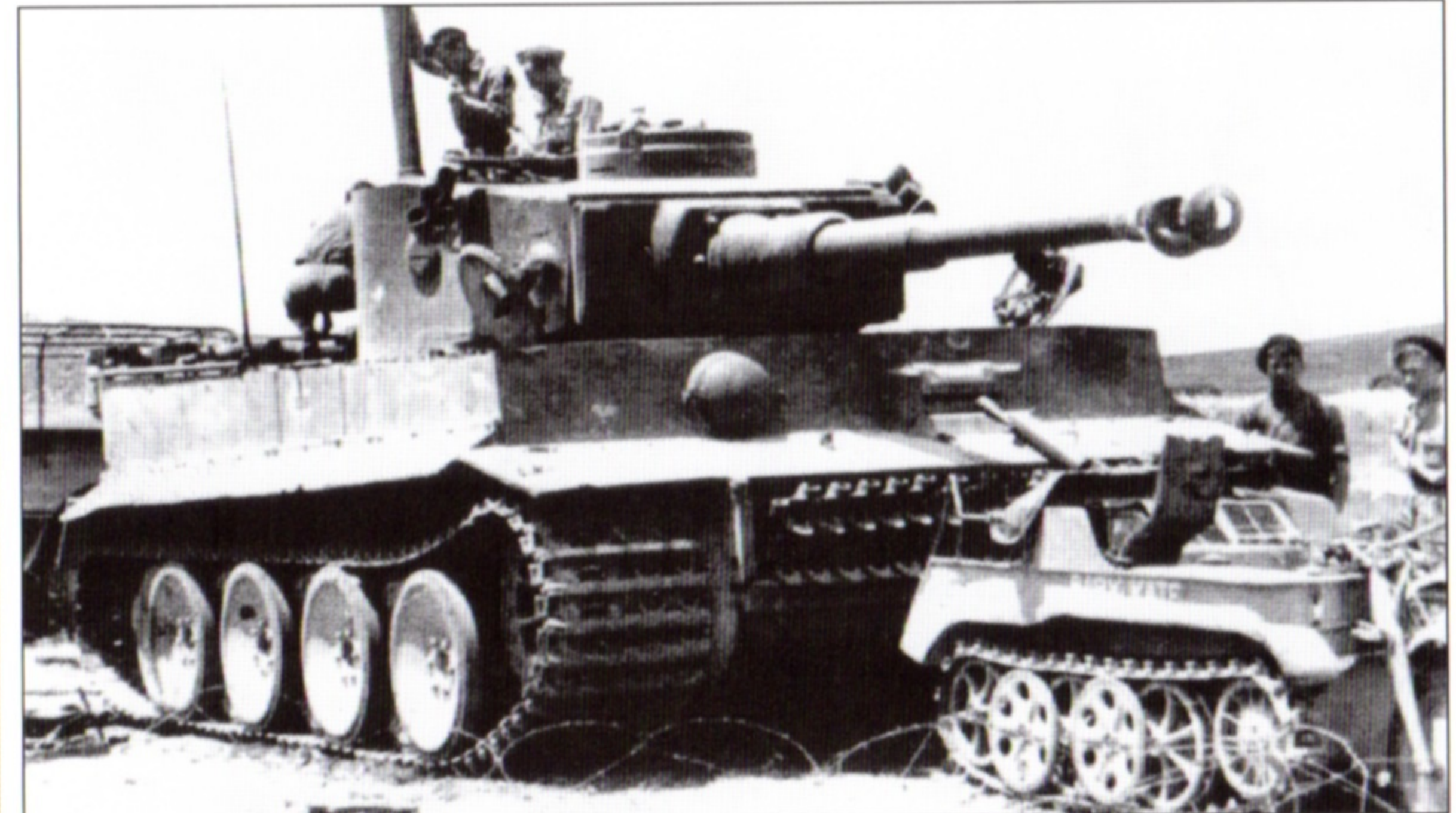
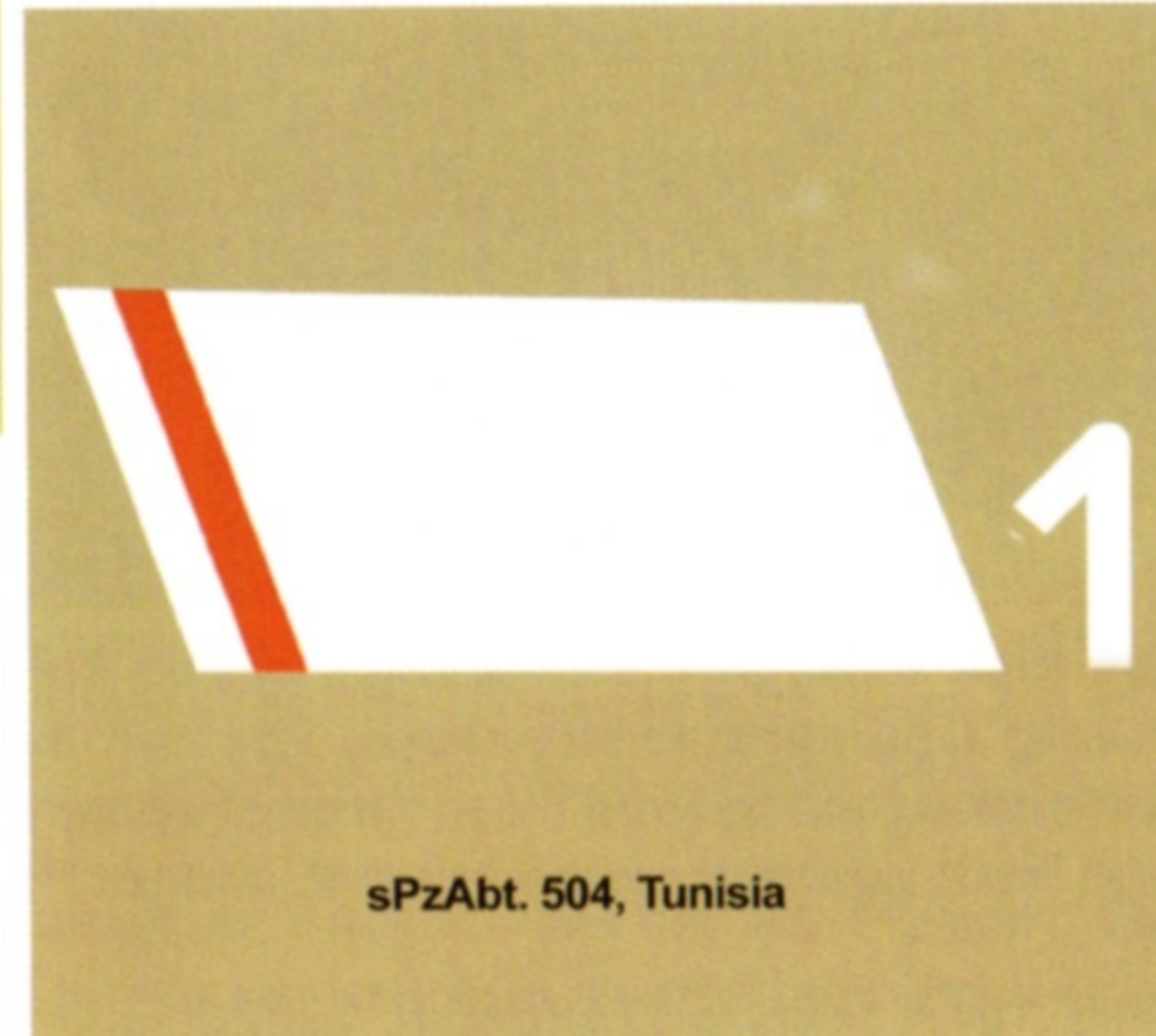
Mud Guards and Headlights



This Tiger tank, hull number 250011 and tactical number 231, of the 2nd Company, schwere Panzer Abteilung 501, was the first Tiger to be captured by the British forces. It was knocked out on the road to Rab' (Robaa), Tunisia, and the resulting fire, which burned for hours, rendered the tank beyond repair. Next to the Tiger is a British Valentine infantry tank, disabled by a well-placed mine. (The Tank Museum)



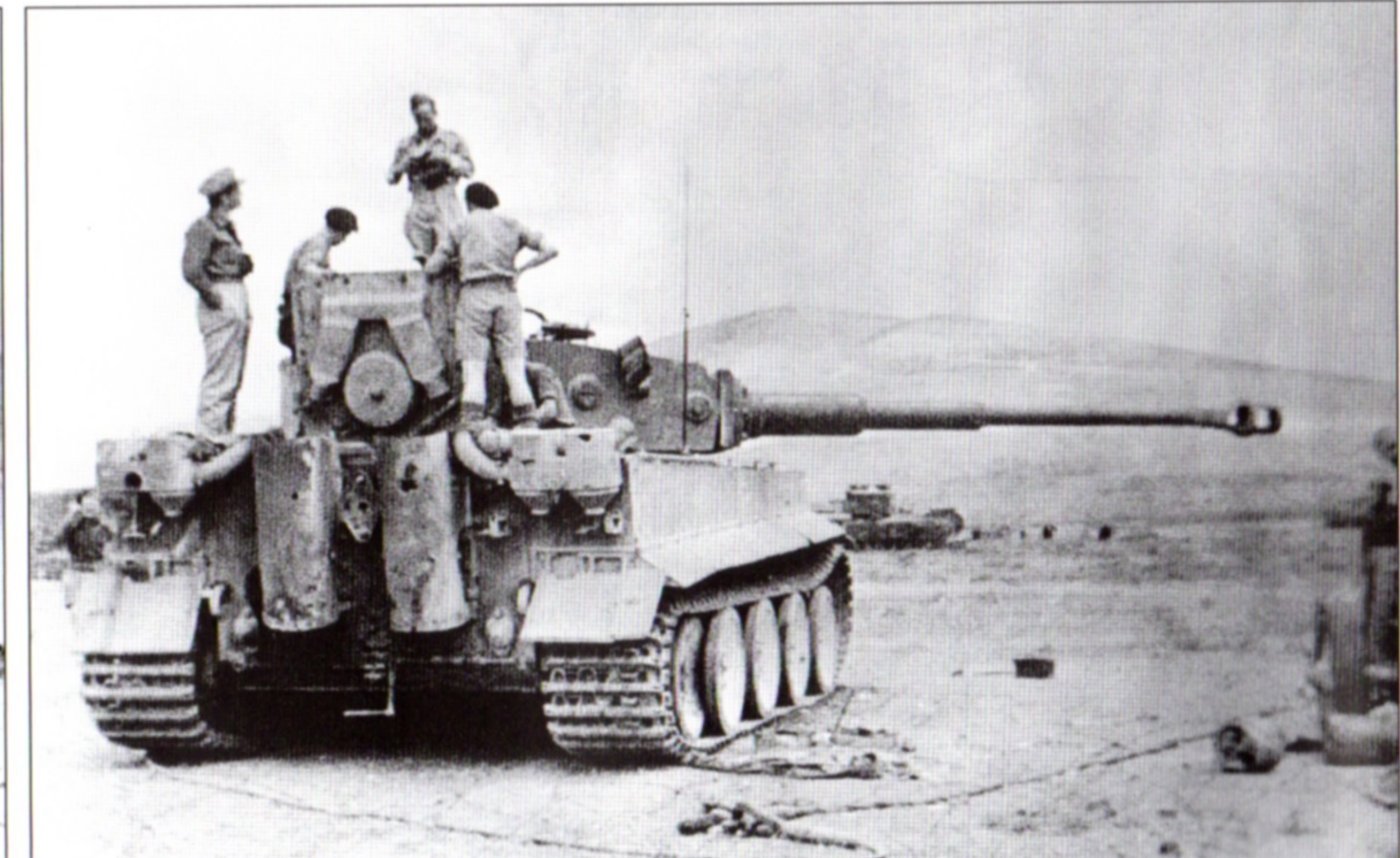
Schwere Panzer Abteilung 504

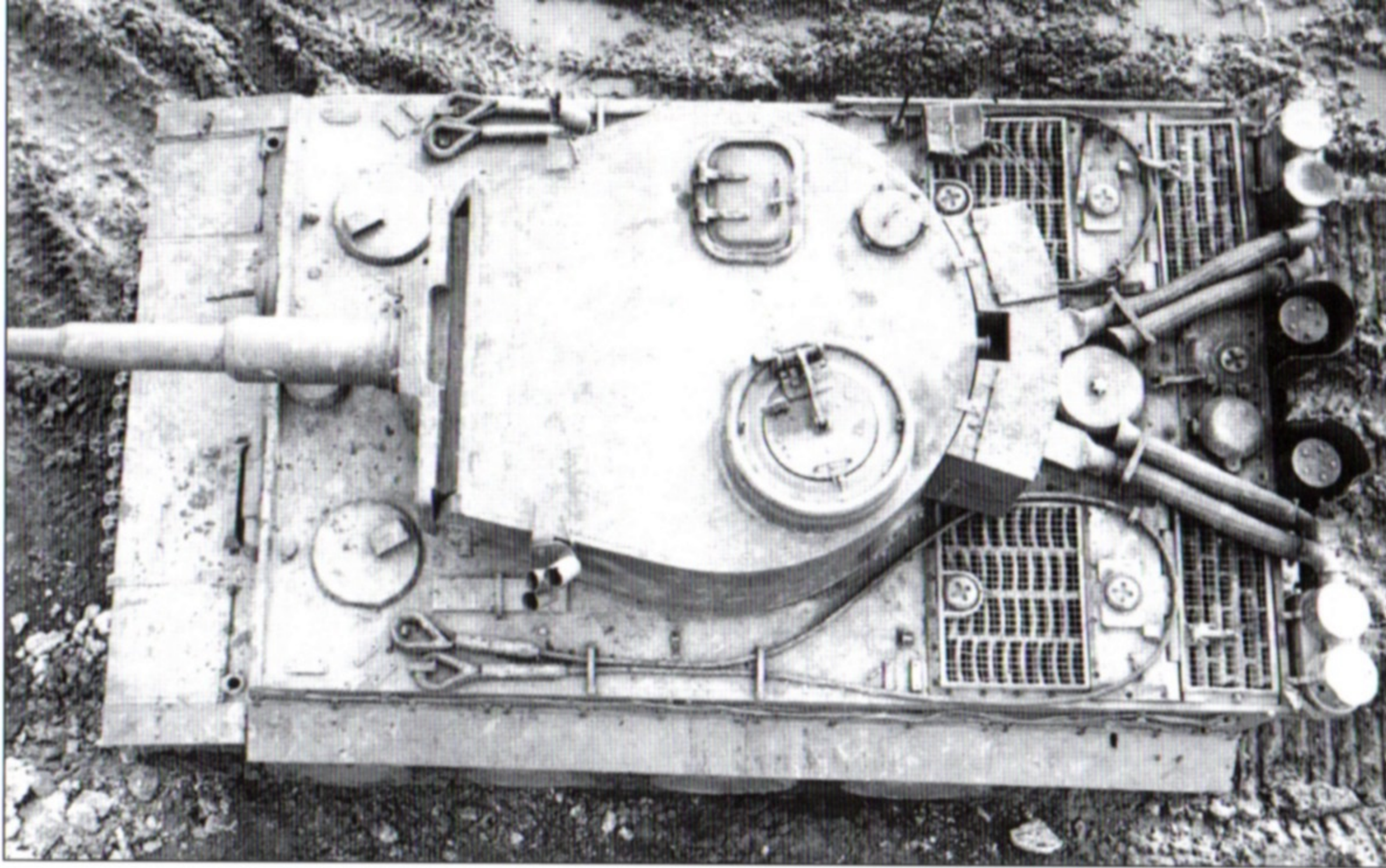


British personnel examine the snorkel tube on the captured number 131 Tiger I of schwere Panzer Abteilung 504. The cover over the front machine gun mount, also part of the deep-fording kit, was attached with two hinged bolts with wing nuts. Parked in front of the Tiger is a captured Kettenkraftrad. (Armor Plate Press)

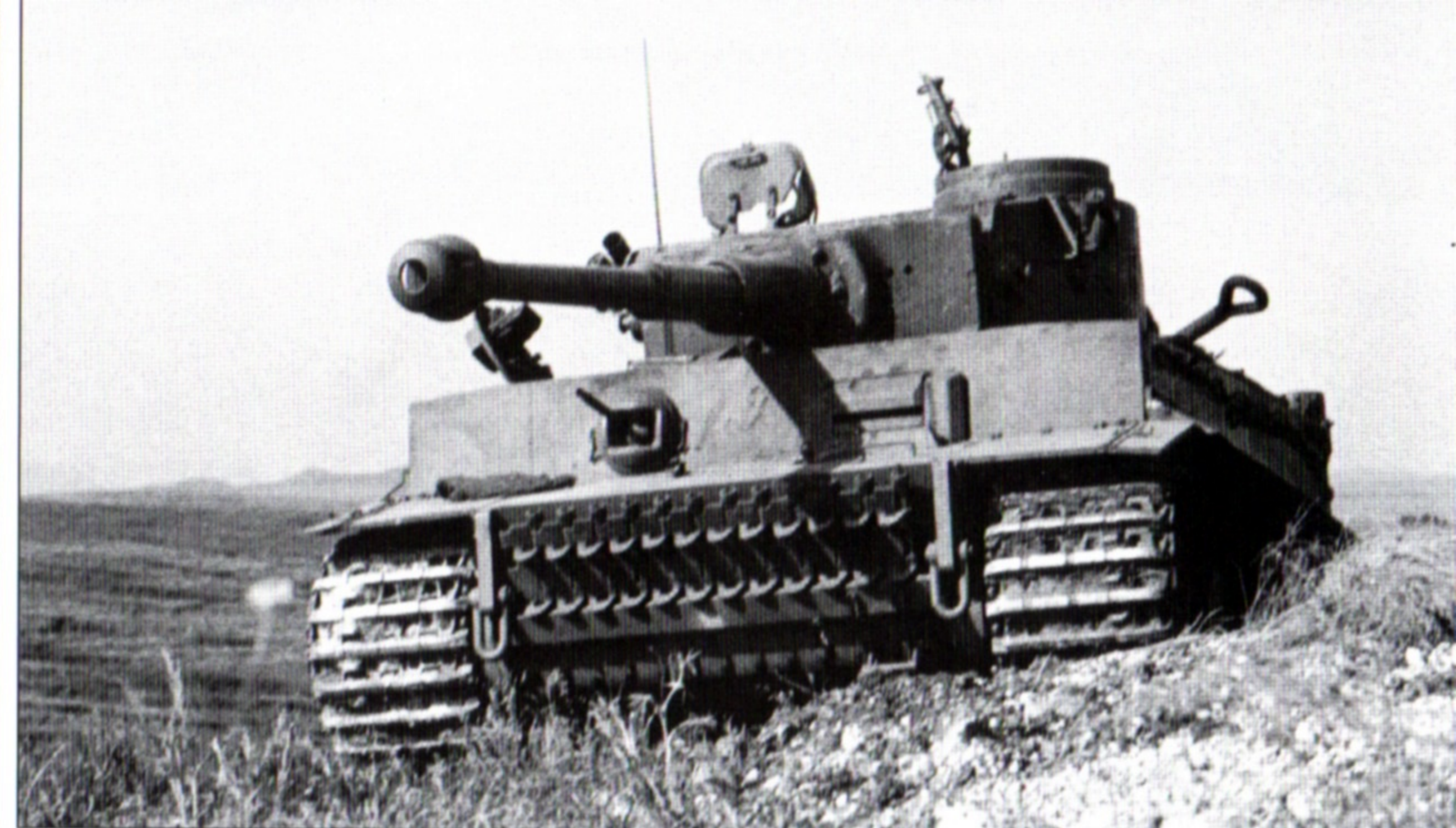
This view of number 131 of schwere Panzer Abteilung 504 taken after its capture by the British shows numerous perforations from projectiles on the muffler heat shields, turret stowage box, and air prefilters. The steel rope on the side of the hull was used in track-changing operations, with the drive sprocket acting as a capstan. (Armor Plate Press)

British personnel inspect the engine compartment of number 131 of schwere Panzer Abteilung 504, which was captured on 21 April 1943, after a Churchill tank disabled its gun mount and turret. This Tiger, chassis number 250112, now resides at the Tank Museum at Bovington and has been restored to running condition. (The Tank Museum)





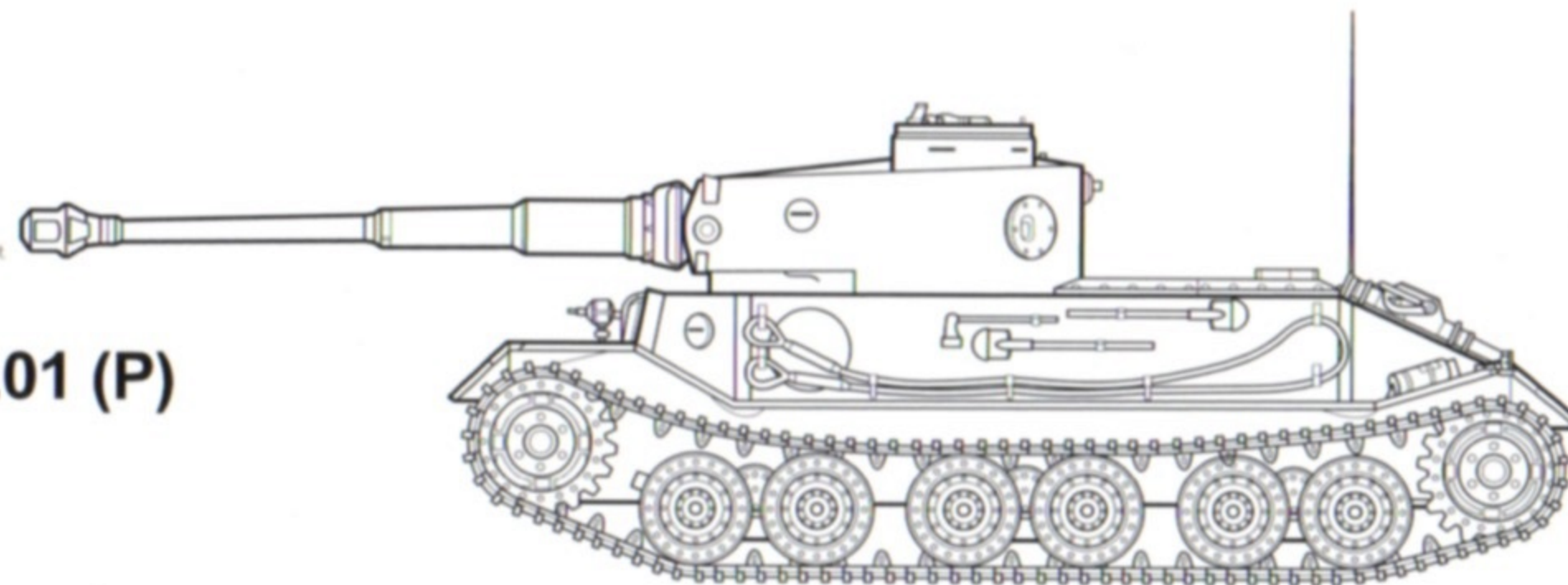
The British took this overhead view of Tiger I tactical number 131 of schwere Panzer Abteilung 504 after capturing it in early 1943. The tank still had the tow cables and air hoses for the Feifel prefilters in place on the rear deck, but the driver's hatch has been replaced with a co-driver's hatch. The cupola and loader's hatch designs are apparent.



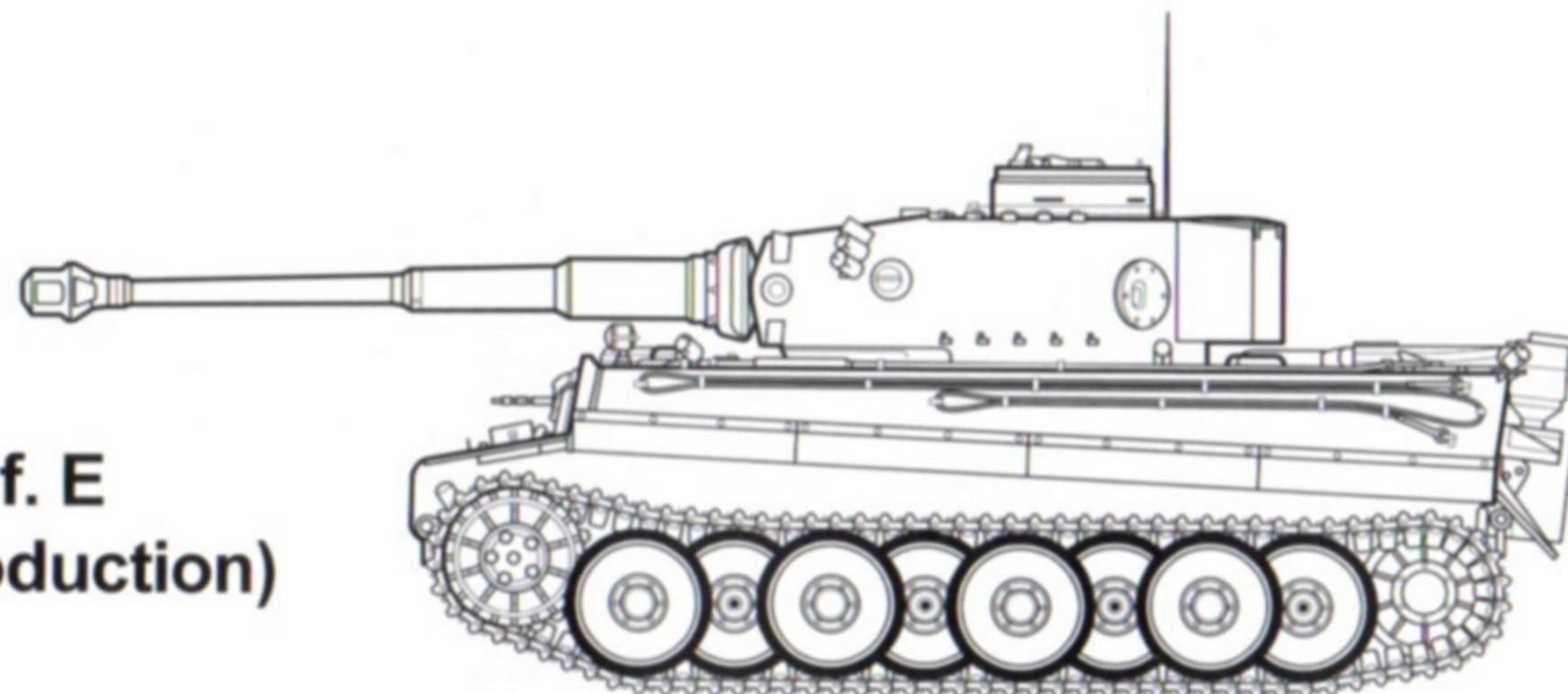
Tiger 131 from schwere Panzer Abteilung 504 was photographed in the approximate condition in which it appeared when captured. A large piece of the loader's hatch is missing. Subsequently, the British replaced this hatch with one from another Tiger. Protruding from the hull next to the turret is a tow cable. (The Tank Museum)

Tiger Development

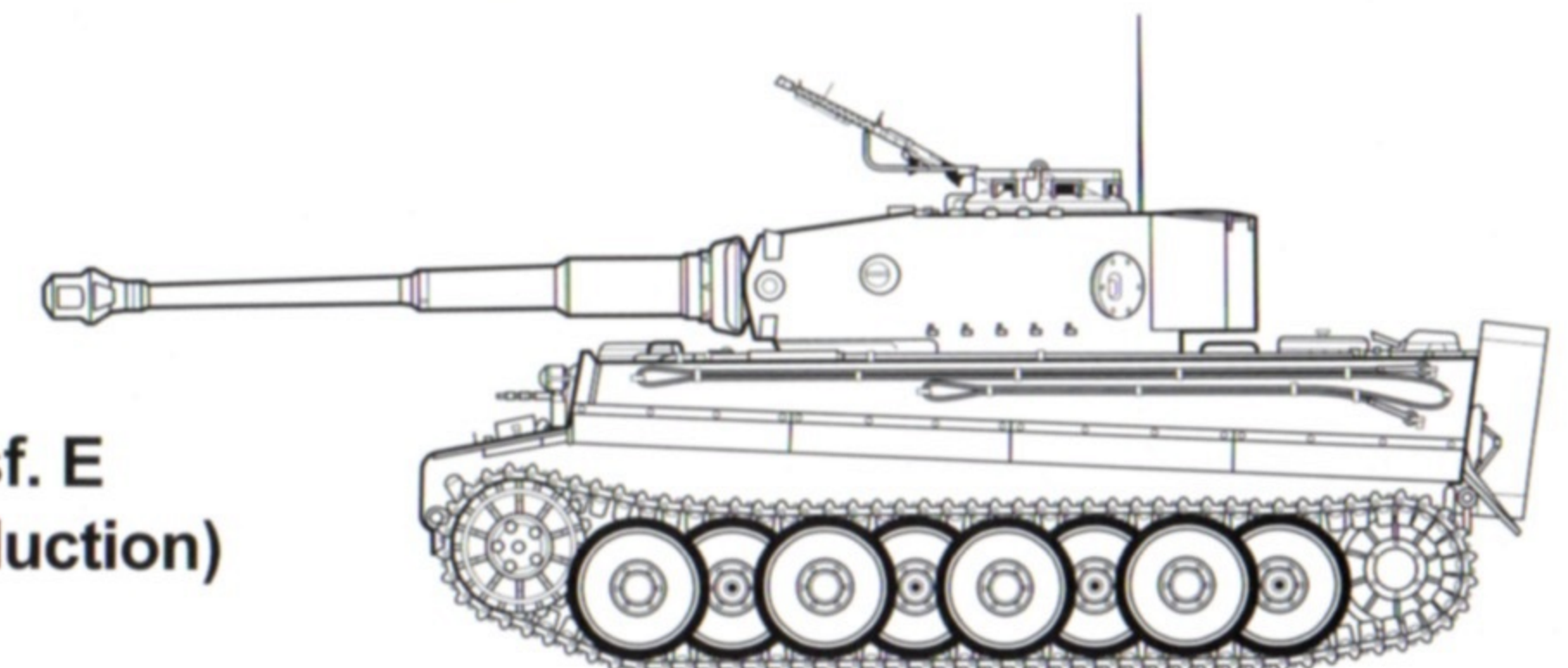
VK 45.01 (P)



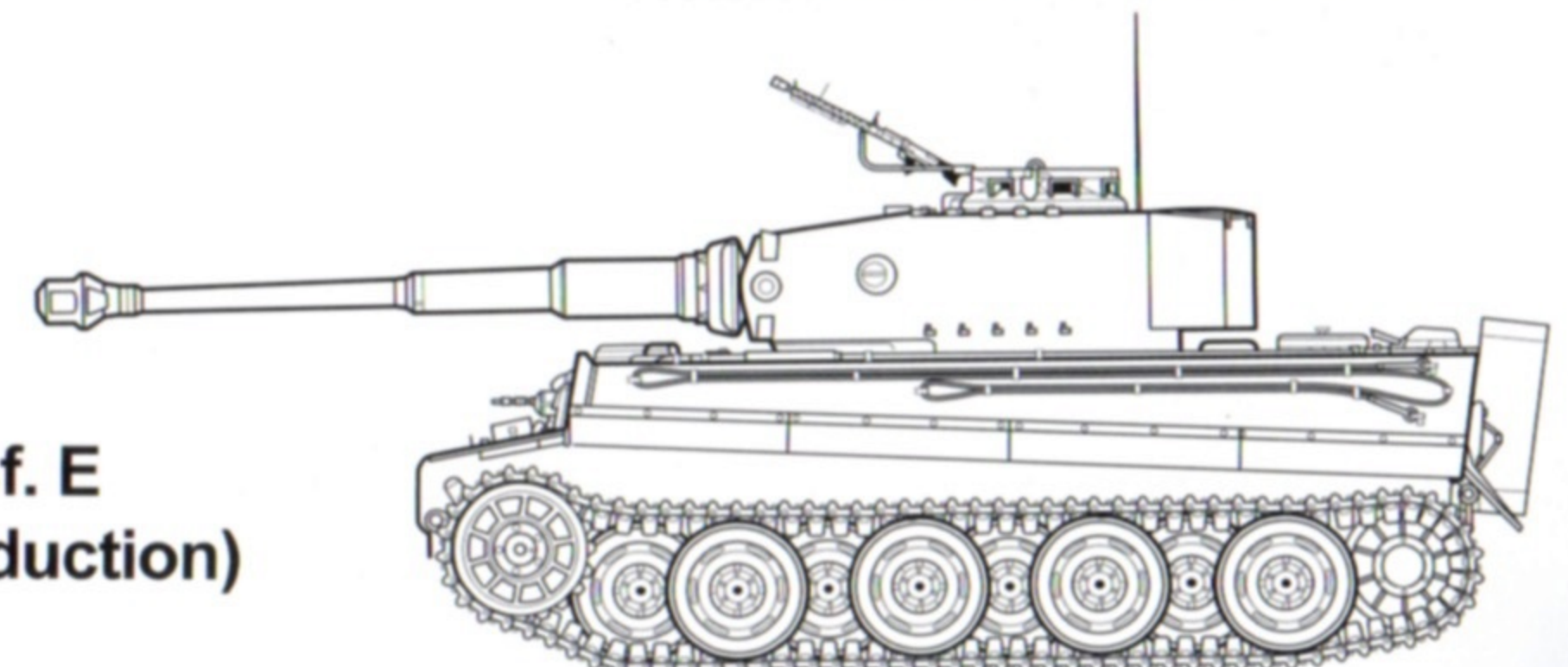
Tiger Ausf. E
(Early production)



Tiger Ausf. E
(Mid production)



Tiger Ausf. E
(Late production)

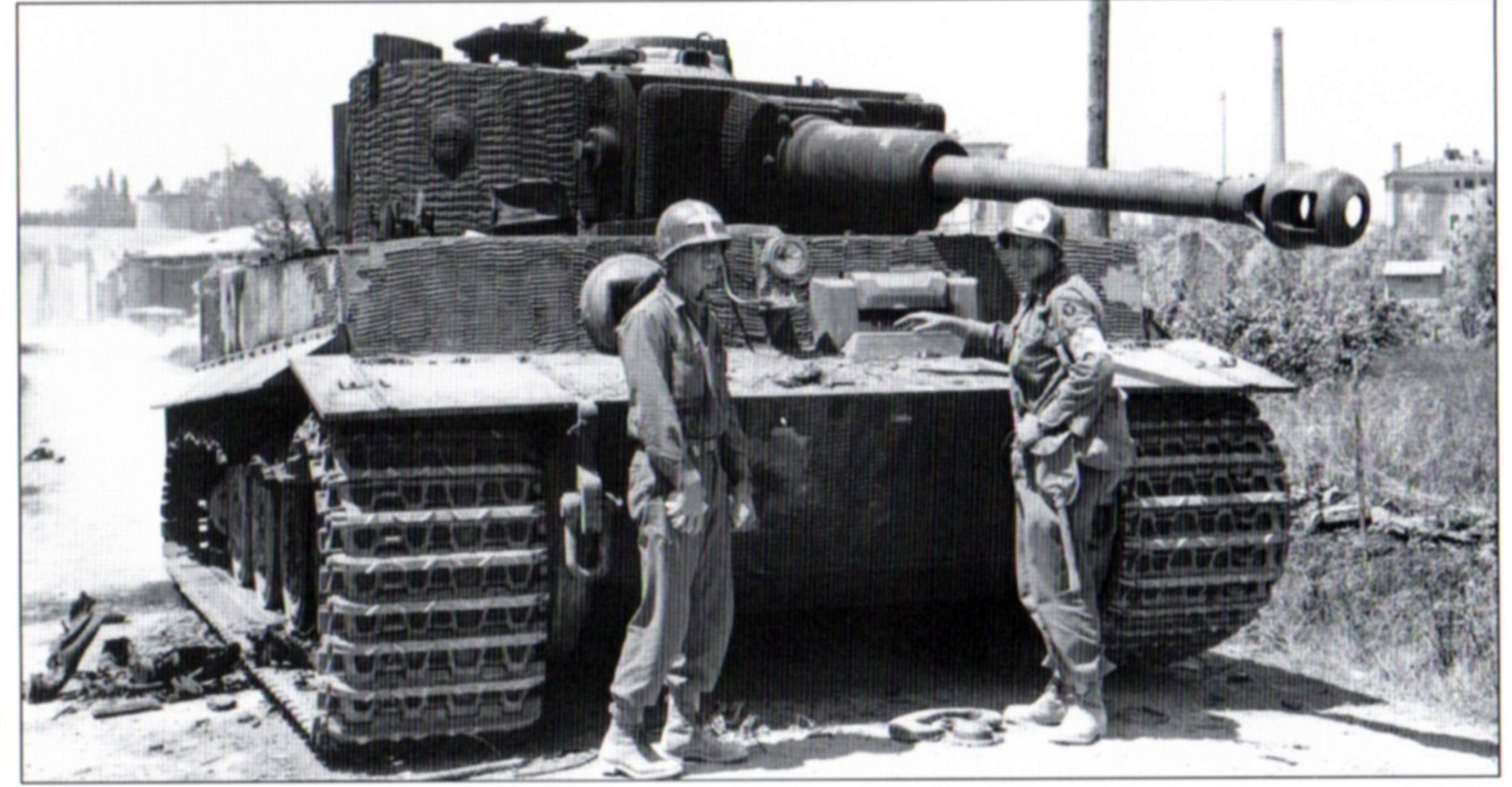


Italy



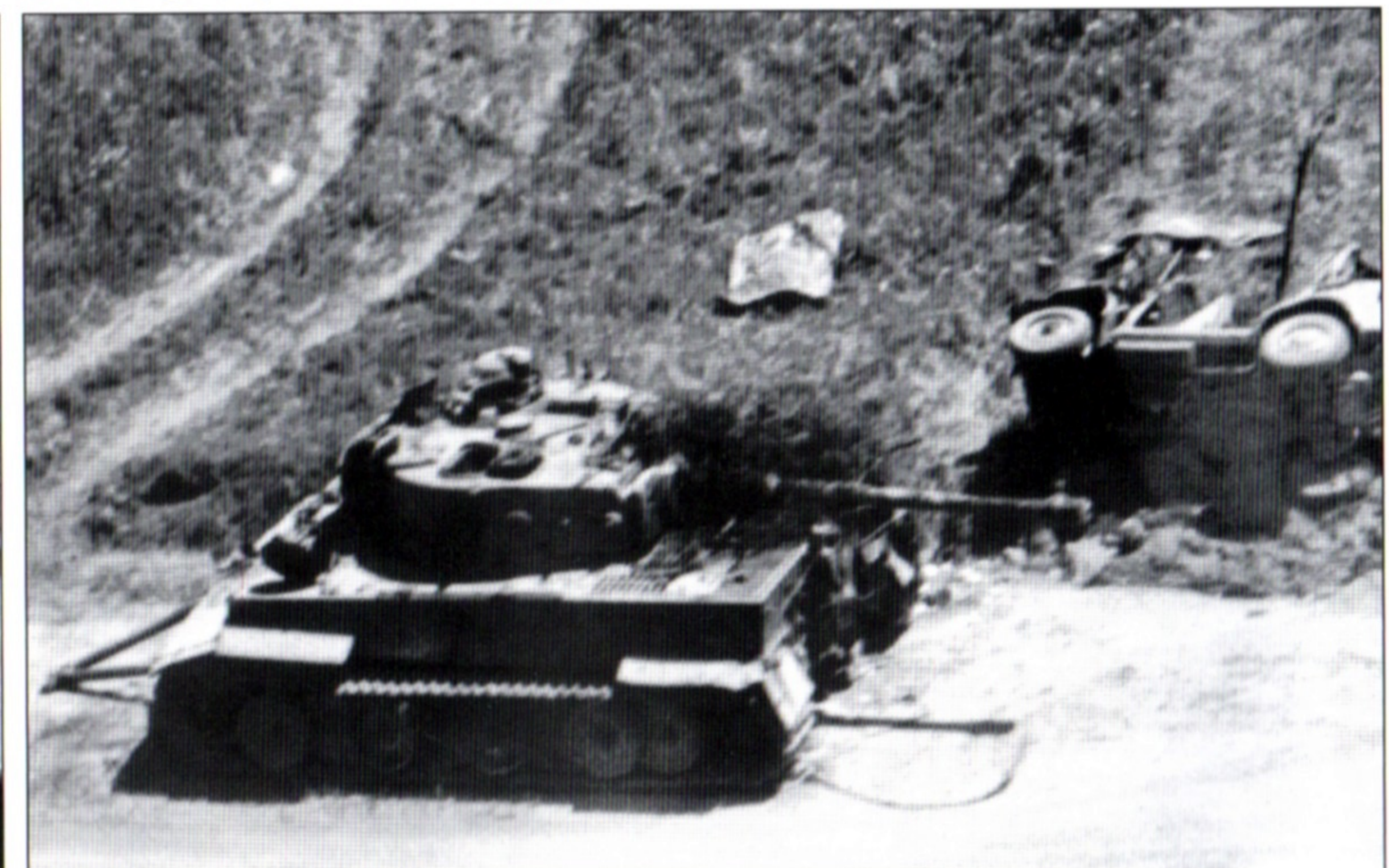
This knocked-out Tiger I Ausf. E near Cecina, Italy, is the subject of a series of at least three photographs. Antitank crews of the U.S. 133rd Infantry scored several hits on the vehicle with armor-piercing shells, following which the German tank's crew disabled the main gun and blew up the vehicle. GIs are seen here inspecting the wreck. (National Archives)

A GI points out a projectile hole punched through the upper right rear of the hull of the same tank. According to at least one account, the hole was caused by an 88mm round stowed inside the vehicle that detonated when the crew set off a demolition charge. The Zimmerit paste has spalled off around the hole. (National Archives)

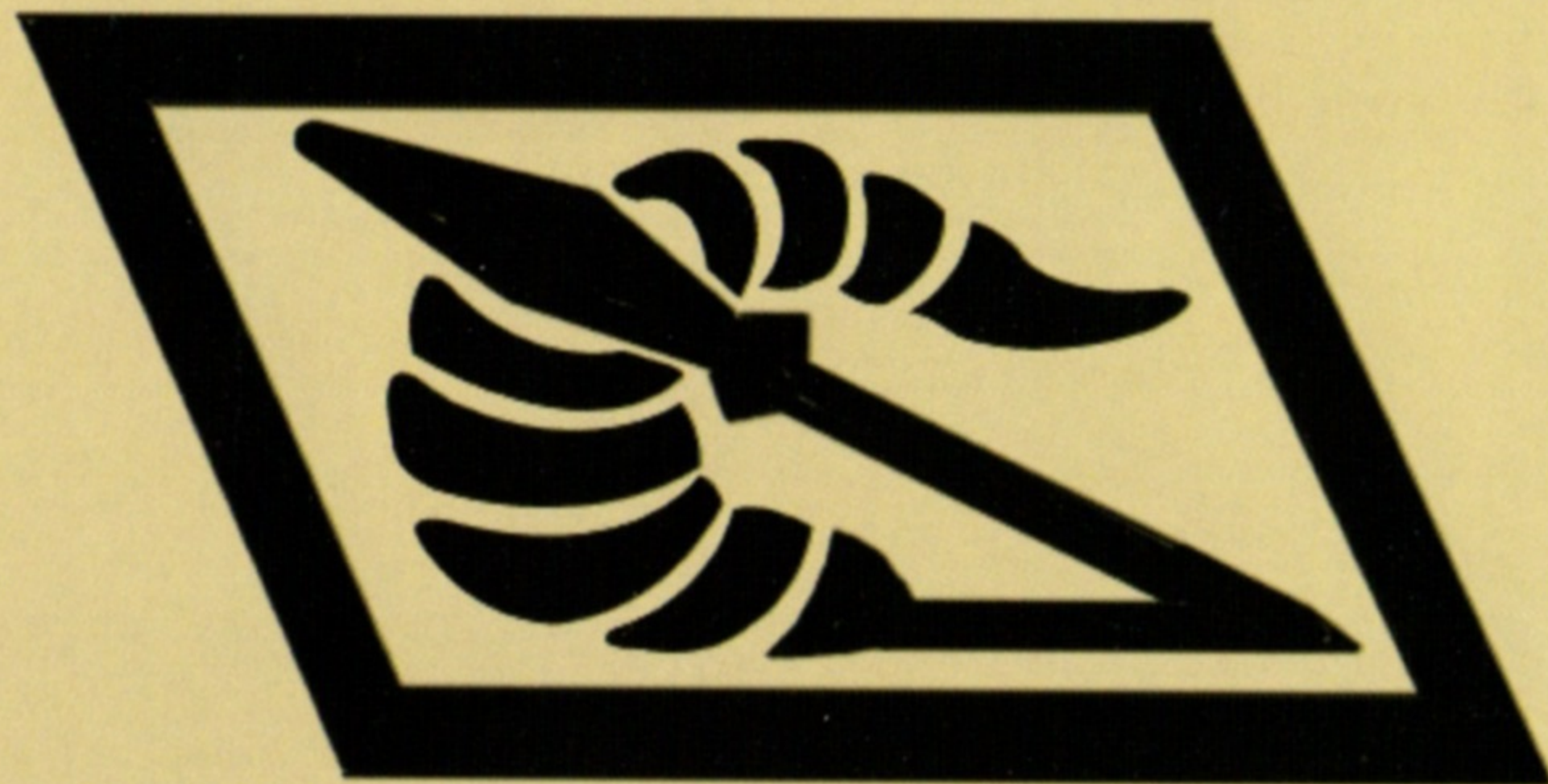


A U.S. chaplain and medic pose with the same tank seen at left. It displays several late-production Tiger I features, including: steel-rimmed road wheels, treads with anti-skid chevrons, a cupola with periscopes, a Bosch headlight between the driver's visor and front machine gun, and a coating of Zimmerit paste to prevent attachment of magnetic anti-tank mines. (National Archives)

A disabled Tiger I with the turret pointing to the rear sits by a destroyed truck near the Anzio beachhead. The crew had tried to recover the tank, and a drawbar is attached to the front of the vehicle. Brush was piled on the rear deck for camouflage, and several of the mud guard panels are missing. (Armor Plate Press)

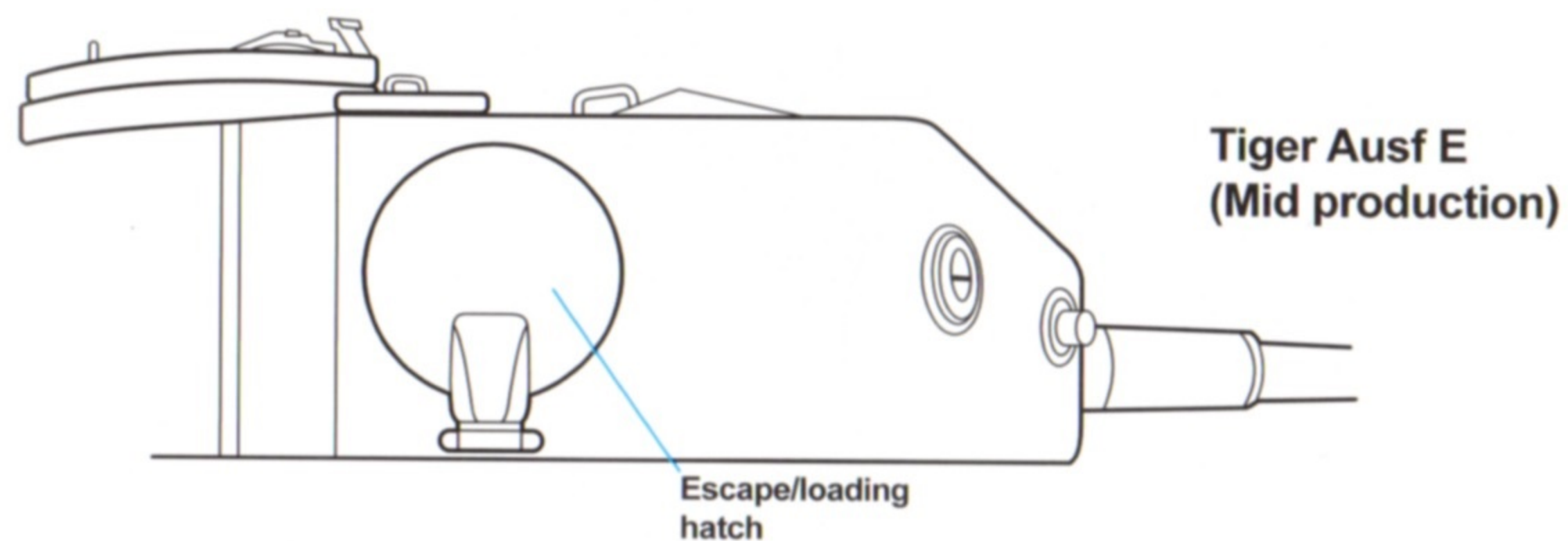
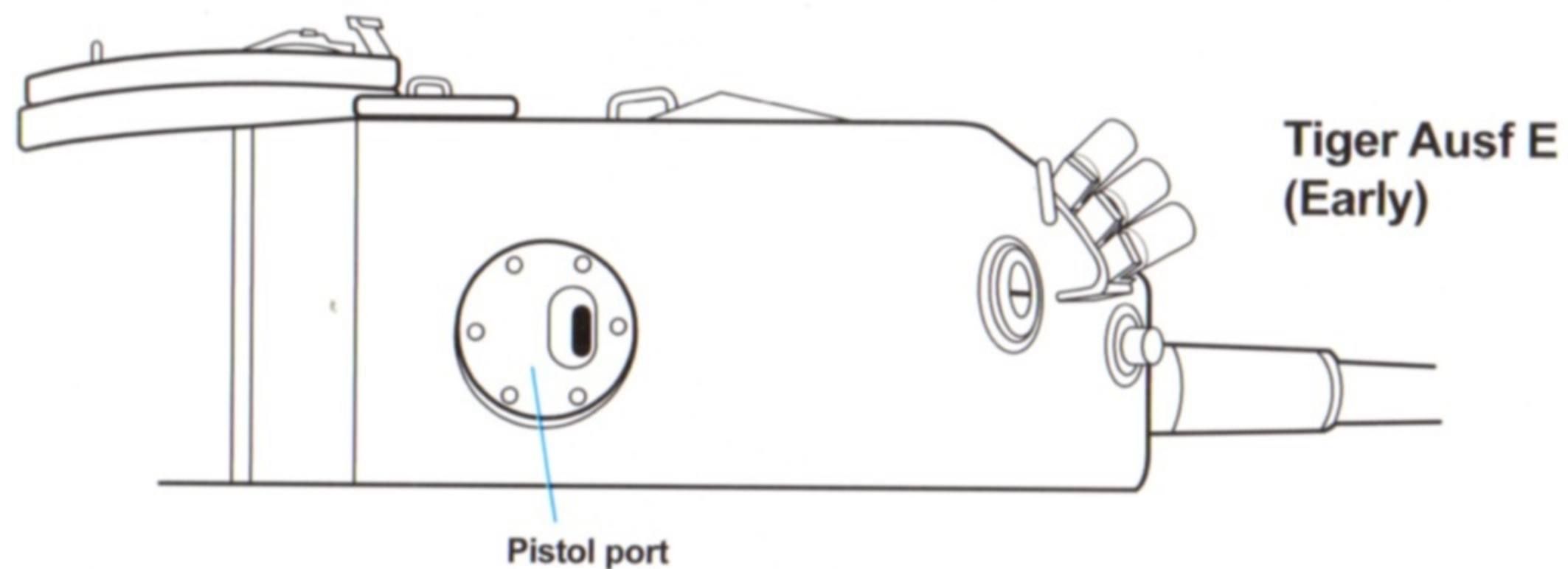


Schwere Panzer Abteilung 504



sPzAbt. 504

Turret Escape Hatch



A Tiger I of schwere Panzer Abteilung 504 advances down a narrow lane in Tunisia in 1943. Attached to the spare-track holder is a small step. The mantlet is the early pattern, with no raised armor strip across the area where the apertures for the gunner's binocular sight was located.



This is one of the Tigers of the 2nd Company, schwere Panzer Abteilung 504, that served in the defense of Sicily. It is an early Tiger, with drum-shaped cupola, early-style Feifel prefilters at the rear, and rubber-tired bogie wheels. The lower surfaces are heavily coated with road dust.



This Tiger I, evidently of schwere Panzer Abteilung 504, was abandoned in Biscari (now known as Acati), Sicily, in 1943. An internal explosion blew off the cupola and buckled the front corner of the hull roof. The tank's front mud guards are missing. A cross and numbers have been marked on the turret roof, possibly by the tank's captors. (National Archives)

A Tiger I tank of the 2nd Company, schwere Panzer Abteilung 504, that deployed to Sicily in 1943 sits abandoned in July 1943. Of the battalion's 17 Tigers in Sicily, only one survived to be evacuated to the Italian mainland following the German defeat. This tank has early-model operational tracks, type Kgs63/725/130. (Armor Plate Press)

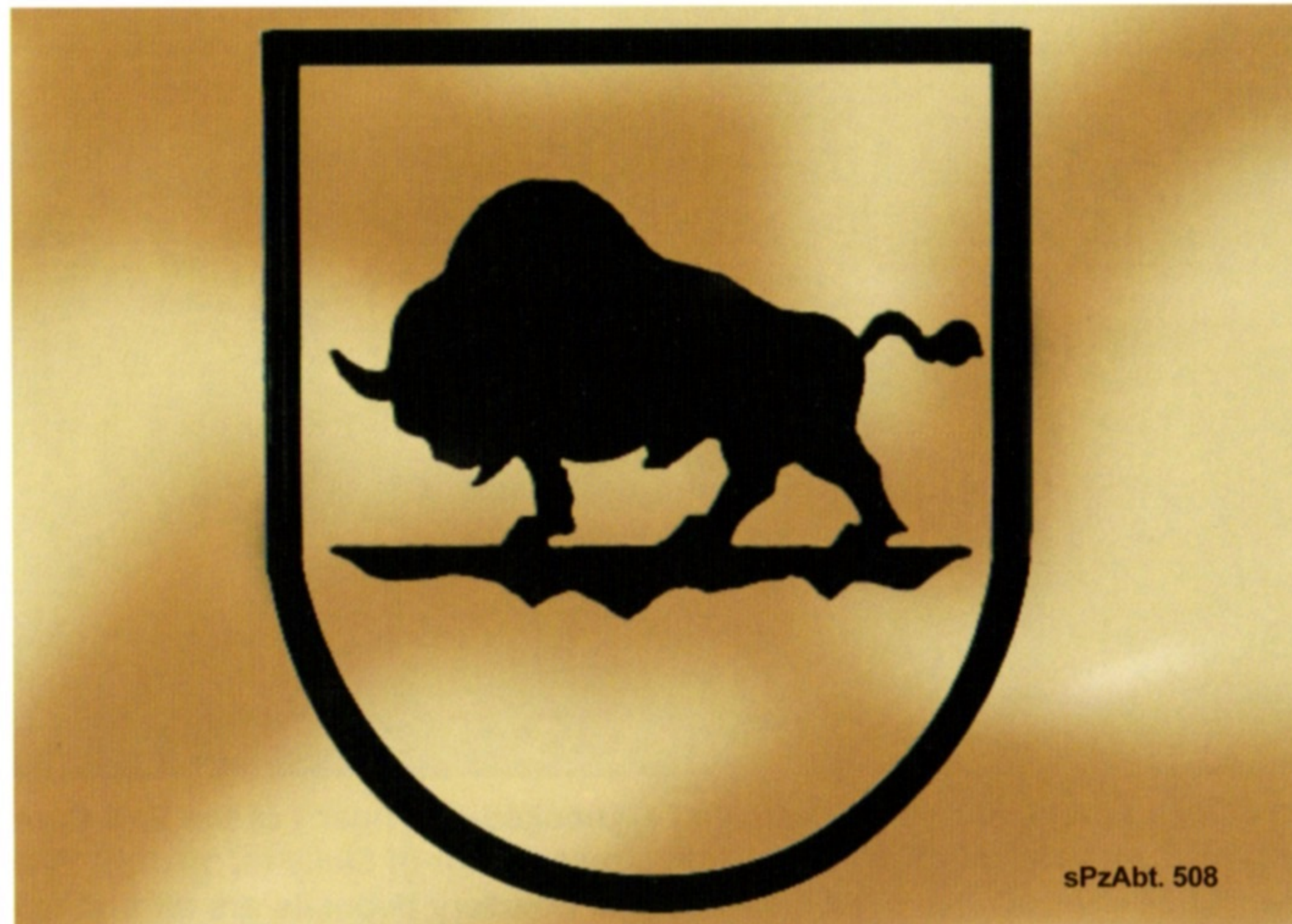


British troops and local civilians examine a knocked-out Tiger I of the 2nd Company, schwere Panzer Abteilung 504, in the Caltagirone sector of Sicily on 19 July 1943. The tank had been destroyed a week earlier. White powdery deposits are all that is left of the rubber tires of the bogie wheels, and several bogie wheels are missing. (National Archives)

A U.S. DUKW amphibious truck squeezes past an abandoned Tiger I of 2nd Company, schwere Panzer Abteilung 504, in Sicily in July 1943. On Sicily, the 2nd Company lost six of its Tigers in combat and abandoned and/or scuttled 10 others. Only one Tiger, tactical number 222, survived to be evacuated from Sicily that August. (Armor Plate Press)



Schwere Panzer Abteilung 508



A Tiger I of the 1st Company, schwere Panzer Abteilung 508, proceeds down an Italian road in February 1944. The battalion was *en route* to the Aprilia sector, where it would combat Allied forces landing at Anzio-Nettuno. A number of tank riders are onboard, some wearing overcoats.



A Roman arch dwarfs a Tiger I of schwere Panzer Abteilung 508 passing through the Eternal City in February 1944. After detraining at Ficule, Italy, the battalion made a 125-mile road march via Rome to the Anzio-Nettuno front, during which the Tigers suffered many breakdowns.



En route to the front at the Anzio-Nettuno beachheads, this Tiger of the 3rd Company, schwere Panzer Abteilung 508, paused in Rome's Piazza de Venezia in front of the National Monument to Victor Emmanuel, now known as the Altare della Patria (Altar of the Nation).



The crew of a Tiger of the 2nd Company of schwere Panzer Abteilung 508 is repairing the right running gear, damaged by a mine near Aprilia, Italy, in May 1944. The process was laborious and time-consuming, and this Tiger was highly exposed to air attack while undergoing field repairs. Two road wheels are in the foreground.

Repairs continue on the same Tiger I of the 2nd Company, schwere Panzer Abteilung 508 near Aprilia, Italy, seen in the photos above. The tank's right running gear has suffered considerable damage. The jerry can is marked with a white cross, signifying that it contained water. The tactical number 2 is outlined in white.



Several road wheels are not visible in this photograph of the same episode as seen at left. Two suspension arms are lying on the ground. Tiger crews were expected to be able to perform repairs such as this, with maintenance company personnel handling more complex work.

Preparations are about to begin to recover this well-camouflaged, disabled Tiger of the 3rd Company, schwere Panzer Abteilung 508, in Italy. Soon, two 18-ton half-tracks operating in tandem will tow the vehicle away. Passing the Tiger in this photo is a Sturmpanzer IV, or Brummbär, self-propelled assault gun.





Near Nettuno, Italy, crewmen repair the running gear of a Tiger of schwere Panzer Abteilung 508. They have removed the right drive sprocket, which is lying in the center foreground, and have lifted the front of the vehicle with a jack positioned under the sponson and resting on top of blocks.

Crewmen from schwere Panzer Abteilung 508 repair the running gear of their Tiger I. During this vulnerable time, the vehicle is well hidden under trees to protect it from prowling Allied fighter-bombers. Lying on the ground are a jerry can and several rounds of 88mm ammunition.



A Tiger I of the 1st Company, schwere Panzer Abteilung 508, drives through Rome on the way to the Anzio-Nettuno front. The tank is providing a piggyback ride for a DKW light motorcycle stashed on the rear deck. Details of the tracks, Zimmerit patterns, loader's hatch door, and jack are visible.



Track repairs are underway on a Tiger I of schwere Panzer Abteilung 508 in the Anzio-Nettuno sector in early 1944. A two-section track link is lying on the ground. Attached to the right-side towing shackle is the eye of a tow cable. The sledgehammer would be put to use driving track pins into place.

Photographed in Cori, Italy, in May 1944, this Tiger I Ausf. E of schwere Panzer Abteilung 508 ran into a bomb crater, confounding German efforts to recover it. The white paint haphazardly applied to the turret and hull reportedly was a safety measure to make the tank, a road hazard, conspicuous at night. (Armor Plate Press)



A Tiger 1 of the 3rd Company, schwere Panzer Abteilung 508, pauses along an Italian highway during the advance from Ficulle to the Anzio beachhead in February 1944. This mid-production Tiger features Zimmerit, the late-model commander's cupola with periscopes, and rubber-rimmed road wheels.



A Tiger crew thought to belong to the 2nd Company, schwere Panzer Abteilung 508, perform repairs on their tank in Italy in early July 1944. Next to the man at left is a radiator fan, while to the right of the tank are a grille and the two heavy castings that protected the bottoms of the mufflers.

Two Tiger I Ausf. E tanks, presumably from the 3rd Company, schwere Panzer Abteilung 508, roll through Cisterna, Italy, during the Anzio Campaign. Their crews evidently were not anticipating imminent combat, judging from the dust cover over the muzzle of the lead tank and the exposed riders. (Armor Plate Press)

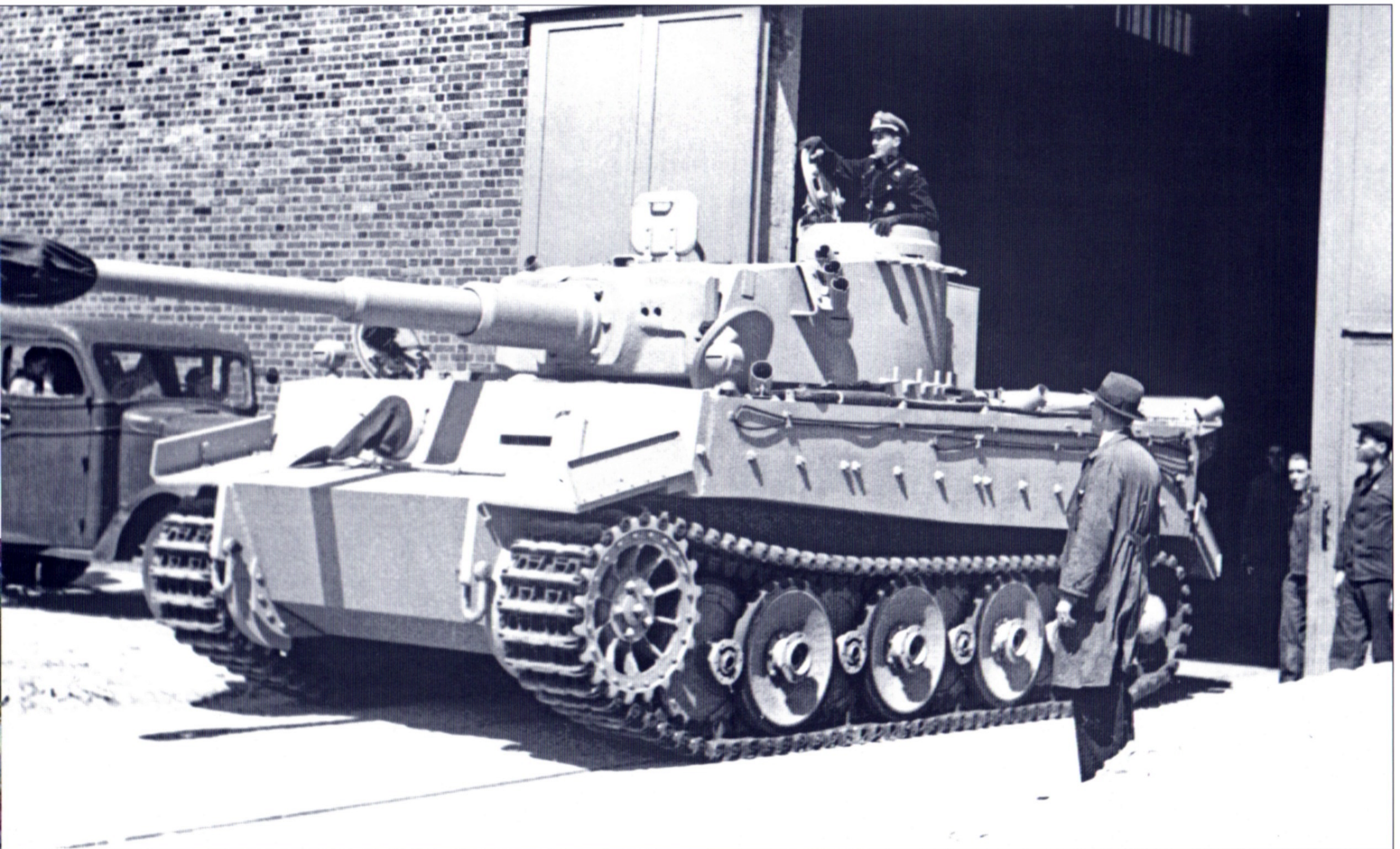


Two heavy half-tracks, apparently SdKfz 9s, work in tandem to tow a damaged Tiger I of schwere Panzer Abteilung 508 in Italy. The mufflers and muffler heat shields have been taken off the rear of the Tiger, exposing the exhaust lines and their openings in the hull.

This Tiger I of schwere Panzer Abteilung 508 was captured by troops of the 22nd Battalion, 4th Brigade, 2nd New Zealand Division at Romola, Italy, on 29 July 1944. The tank has steel-rimmed road wheels and torn-up mud guards. The bottom of the tank's faint Balkenkreuz is hidden by the top of a mud guard. (National Archives)



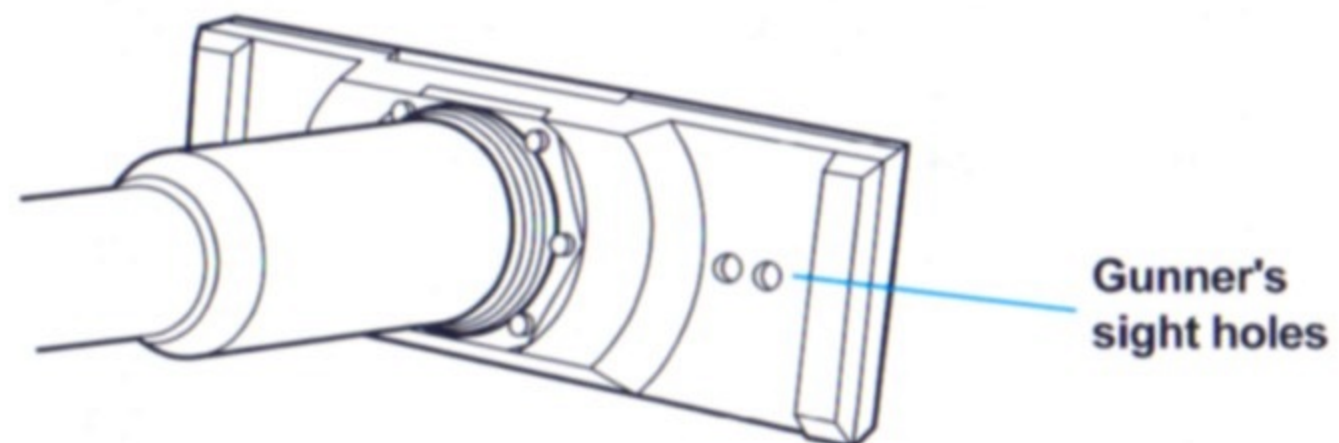
The Eastern Front



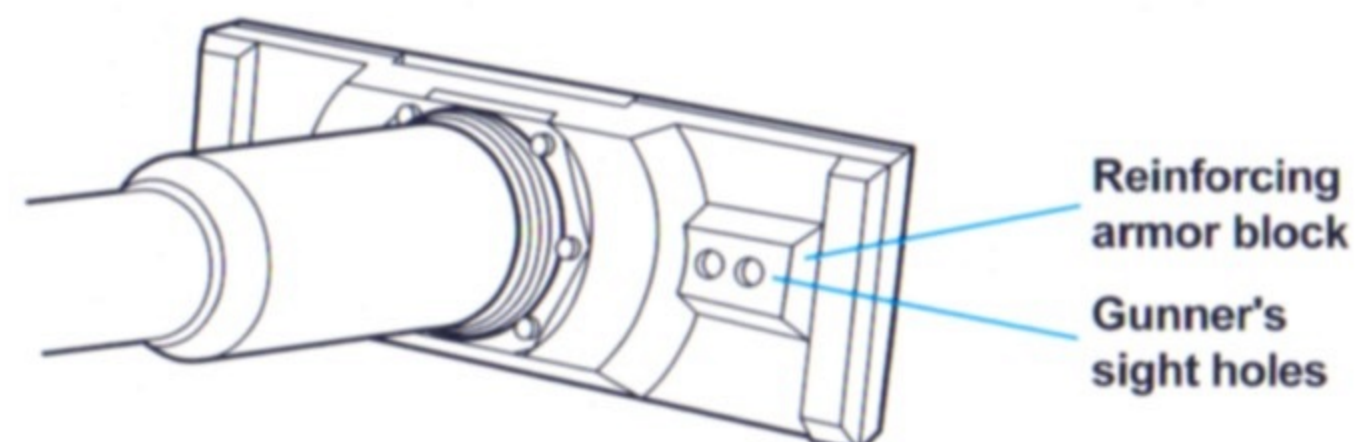
Tiger I, hull number 250234, makes its maiden drive out of the factory in May 1943. It is painted Dunkelgelb overall and is devoid of markings. This tank features a reinforced mantlet across the area where the gunner's binocular sight apertures are located. The loader's periscope on the turret roof was introduced in March 1943. There are spare-track holders on the turret.

Gun Mantlets

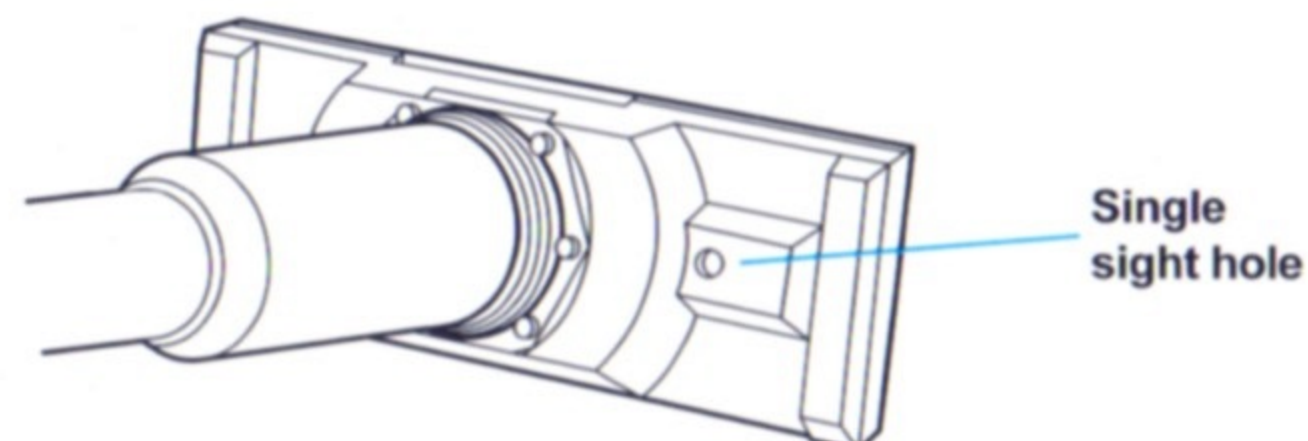
Tiger Ausf E
(Early production)



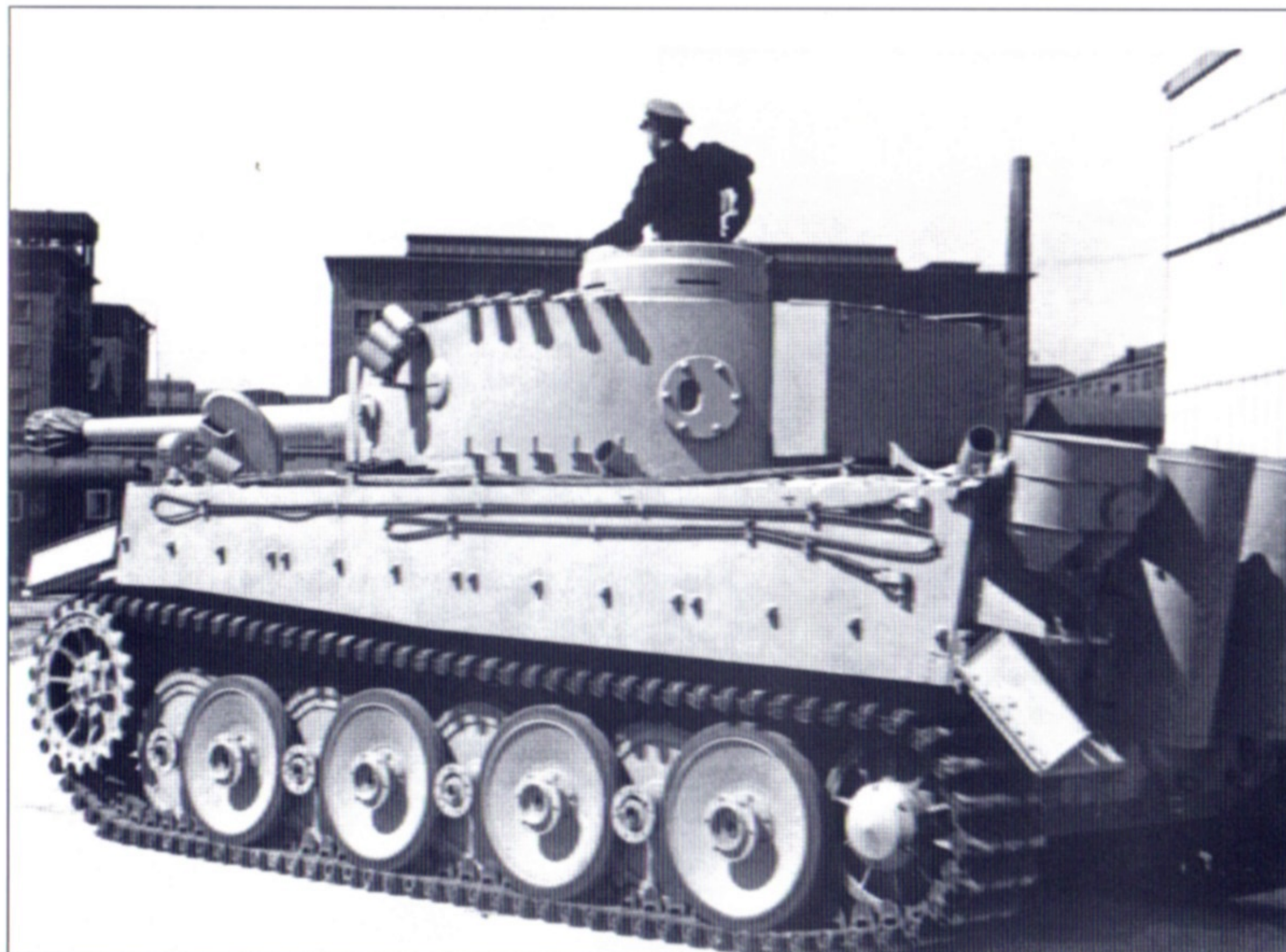
Tiger Ausf E
(Mid production)



Tiger Ausf E
(Late production)



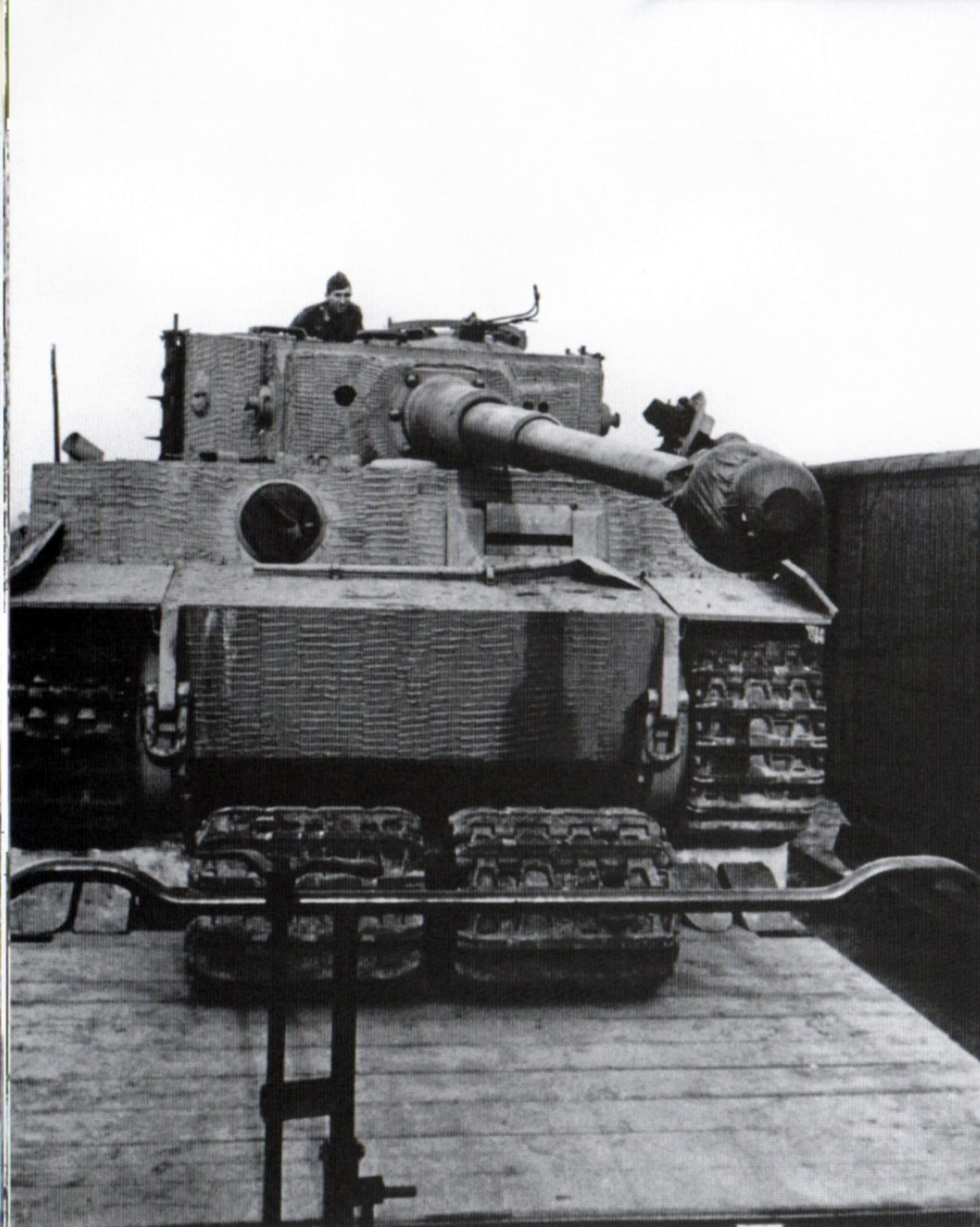
In preparation for loading onto a railroad flatcar for deployment to a training area or the front, the narrow-width transport tracks (*Verladeketten*) are installed, the side skirts have been detached, and the outer road wheels have been removed.



The outer flaps of the front mud guards on this new Tiger I have been secured in the "up" position, in conformance with the strict width limitations of European railroads. The two headlights are in the early-production configuration.

This Tiger is configured for railroad shipment. The outer row of bogie wheels is removed, the hinged outer panels of the front and rear mud guards are secured in their raised positions, and wooden blocks act as chocks to keep the tank from shifting forward or to the rear. (Patton Museum)





Its transport tracks (*Verladeketten*) installed, a Tiger tank rides the rails. Stowed under the hull on the railroad flat car are the Tiger's operational tracks (*Marschketten*). On the late-type commander's cupola ring is a mount for an MG-34 anti-aircraft machine gun. The driver's hatch door is open, revealing the periscope mounted on its inner side. (Patton Museum)



Mid-production Tiger tanks ride the rails on flatcars. Chocks have been snugged up to the tracks, and the outer bogie wheels are stacked behind the tanks. On the nearest tank, a late-type engine-starter attachment with two large central holes is visible between the muffler shields. The hull and turret are coated with Zimmerit.

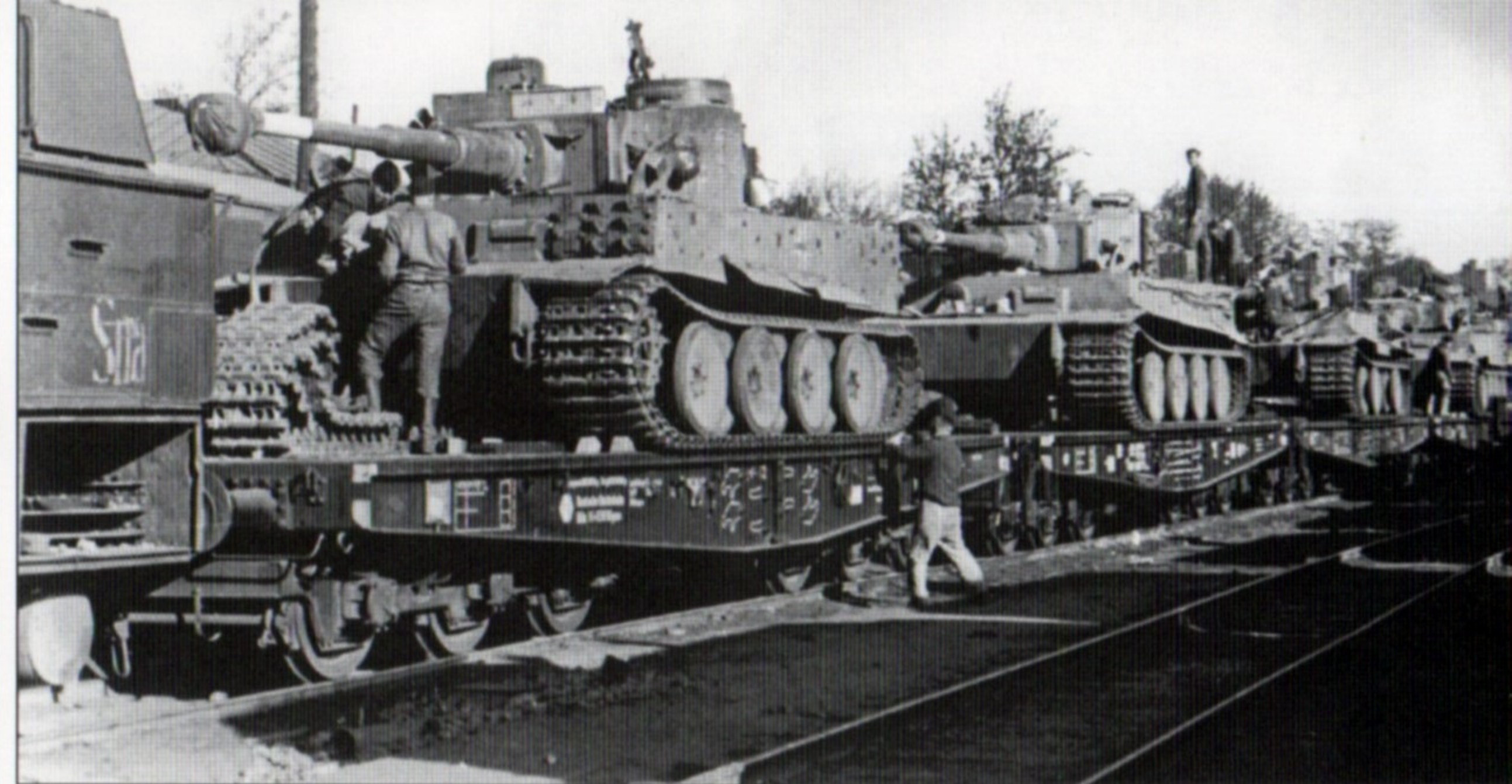
A Tiger I waits at a to be loaded on a flatcar for long-distance transit. The Germans made intensive use of Europe's railroad systems to shuttle Tiger units from one hot spot to another. Here the tank seems to be ready for loading on the flatcar with its narrow transport tracks on, instead of the wider operational tracks. (Armor Plate Press)





Tiger I tanks ride railroad flatcars on their way to the Grossdeutschland Division in the northern part of the Eastern Front in August 1944. It is probably due to the shadowing effect of the Zimmerit that the smooth surfaces of the Tiger in the foreground look lighter than the hull and turret. The tank was probably painted Dunkelgelb overall.

An early Tiger tows a disabled Soviet T-34/76, shortly after the Tiger's combat debut in August 1942. Contrary to rumor, the Soviet T-34 was not the impetus of the Tiger design. German encounters with the new Russian tank did, however, increase the urgency of Tiger production. Weighing 26 tons, the T-34 was much lighter than the Tiger and relied on the slope of its armor for enhanced protection.



Early Tiger I tanks are loaded on flatcars for cross-country transport. They are not wearing the narrow transport tracks (*Verladeketten*) intended for rail shipment, but rather their wider operational tracks (*Marschketten*). Welded over the gun sight apertures in the lead tank's mantlet is a small plate, probably intended as a sun screen, a feature also seen on other Tigers.

The crews of several new, unmarked Tigers train on their vehicles on the grounds of a château. There are black covers over the front machine gun and the 88mm gun muzzle on the Tiger in the foreground; the operational tracks are installed, and the commander's cupola is the early, drum-shaped type.





The "S" on the side of the turret of this 2 SS Panzer Regiment ("Das Reich") denotes *schwere* – or heavy. The two following digits indicate the platoon and position within the platoon. This tank appears at it did during Operation Zitadelle in 1943.

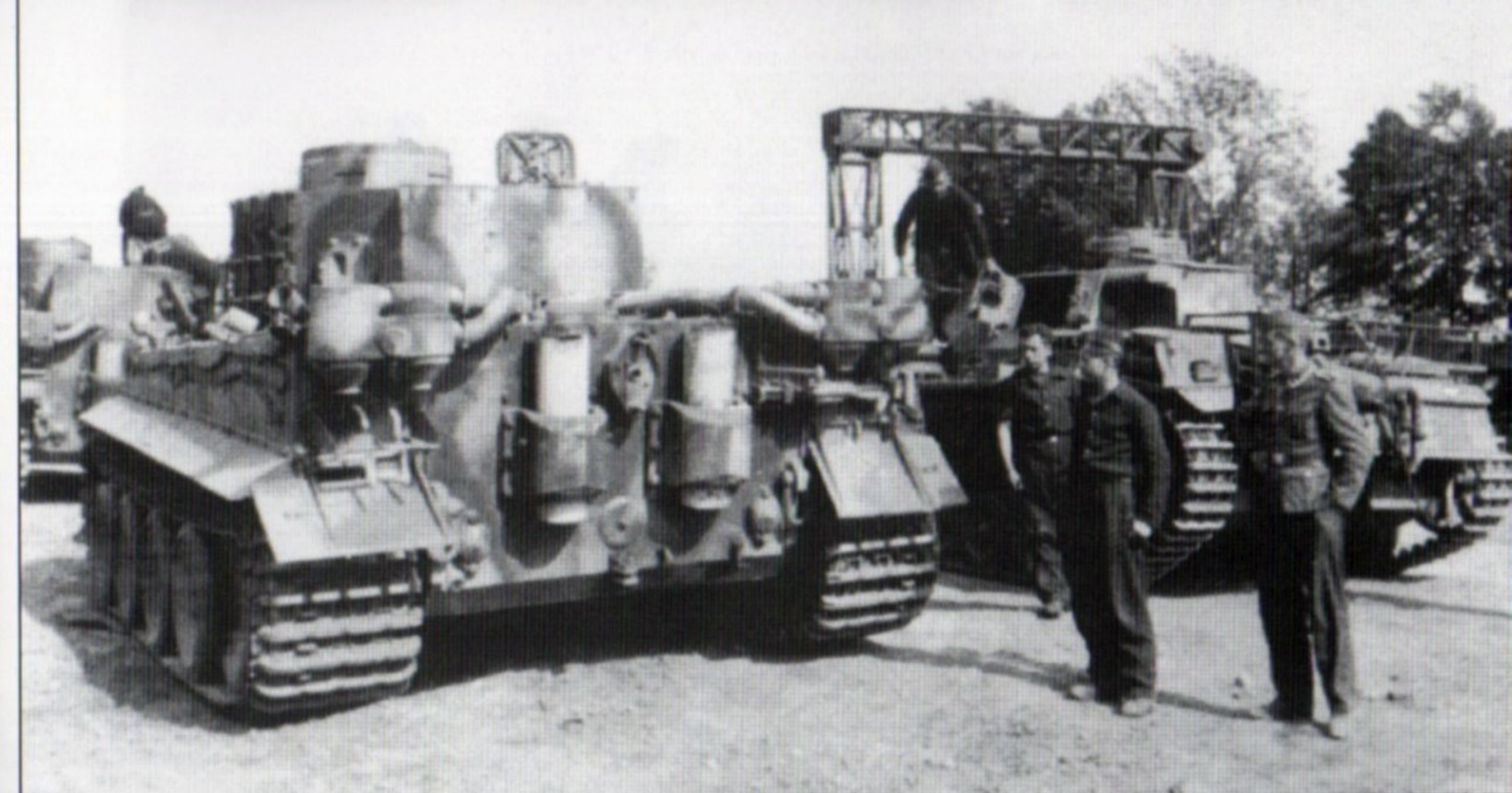
Track links from a Tiger I (left) and Panzerkampfwagen III (right) are positioned next to each other to demonstrate their relative sizes. A panzer crewman also holds a road wheel from another vehicle next to that of a Tiger, demonstrating the immensity of the Tiger compared to most other vehicles. The crewman's collar patches indicate that he is in the Waffen SS. (Armor Plate Press)



During an ammunition replenishment, a tank crewman demonstrates the relative sizes of the Tiger's 88mm round and what appears to be a 50mm round for a Panzerkampfwagen III. To the lower right are three smoke discharger tubes. (Armor Plate Press)



Crewmen pass 88mm ammunition to a man inside the turret. As the Tiger I had space for storing up to 92 rounds of 88mm ammunition, replenishing a tank that had expended most of its ammunition could take a while. This vehicle has a single tactical number: a white 1 with an additional outline on the right side. (Armor Plate Press)



Tigers, including an early-production example in the foreground, and a Panzerkampfwagen III are seen at a maintenance yard. A Portalkran looms in the background. This photo gives a good view of the Feifel prefilters and hoses, as well as the mufflers and their armored guards with the muffler shields removed. (Armor Plate Press)

As a camouflage measure, at least six evergreen trees have been cut down and leaned against a parked Tiger I with its turret rotated toward the rear. When there was not sufficient woodland in which to hide a tank not on the move, such measures were necessary to prevent its being spotted by enemy aircraft or artillery observers.





Two mid-production Tigers prepare for action, with the one on the right starting to move forward. At least eight white-camouflaged tank riders are poised on the rear deck of the tank, which appears to be tactical number 221. Bits of whitewash camouflage are visible on the Tiger on the right.



A Tiger crew replenishes the tank's ammunition somewhere on the Eastern Front. Next to the tank crewman crouching on the Tiger's deck is the circular escape hatch toward the right rear of the turret. At the bottom of the hatch is a single, heavy-duty hinge.

Tiger I crewmen in overalls perform routine upkeep on their tank. At first glance, the vehicle seems to have a coat of whitewashed winter camouflage, but on closer inspection it seems to have a paint scheme of Dunkelgelb with faint, sprayed camouflage, covered in places with caked-on snow and mud. A single S-mine discharger is at the rear of the hull.



Keeping the Tigers supplied during active operations was a monumental logistical problem. The Wehrmacht relied on a variety of vehicles to transport ammunition and supplies. One was the Munitionspanzer III, modified from turretless Panzerkampfwagen IIIs. Soldiers are passing 88mm ammunition from one such vehicle.

A new, unmarked Tiger negotiates a road crossing during training maneuvers in 1943. The Tiger I could climb a vertical obstacle 2.6 feet high and could negotiate slopes of 35 degrees. In addition, it could cross a trench 8.2 feet wide. This view shows the location of the loader's periscope on the turret roof, introduced in March 1943. (Patton Museum)





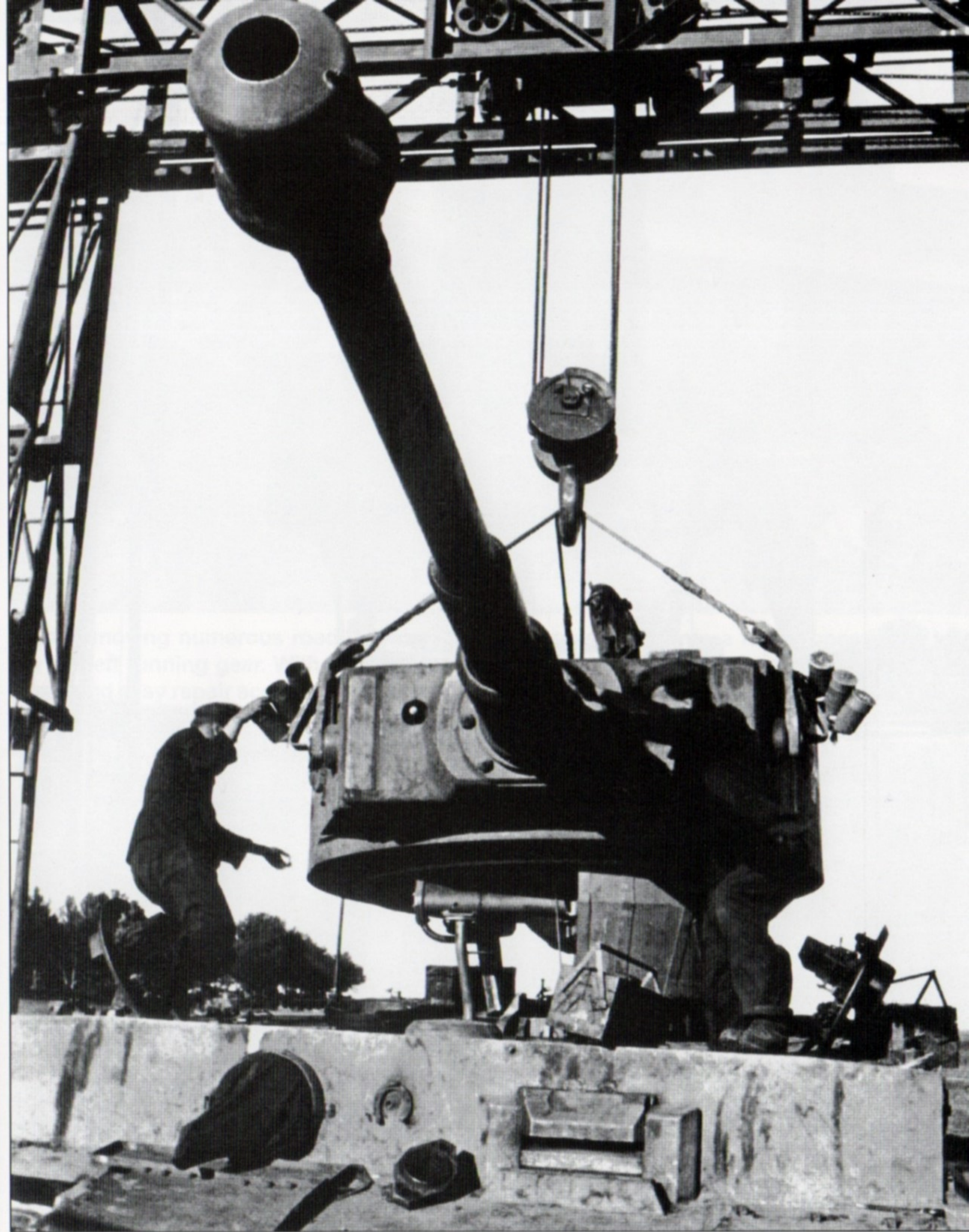
In the summer of 1943, a Tiger I undergoes repairs at a maintenance depot in occupied Soviet territory. Cables attached to the lifting lugs on the turret are hooked to the hoist of a Portalkran. Removing the turret allowed repairs to be made to the interior of the turret and the fighting compartment as well as to the drive train.



In a maintenance area, crewmen raise a Tiger turret off its temporary stand of fuel drums, ready to reinstall it on the chassis in the background. It is possible that the whitewashed 88mm gun barrel was salvaged from the whitewashed turret to the left and installed on the turret in the foreground. (Patton Museum)



The turret is being gently lowered onto the Tiger chassis. Heavy Panzer battalion maintenance companies were equipped with portable gantry cranes for performing heavy lifting. Manufactured by J. S. Fries Sohn of Frankfurt am Main, the Portalkran weighed 17,250 pounds but could be quickly erected. Its capacity was 33,000 pounds. (Patton Museum)



The turret of another Tiger tank is being lowered into place by a Portalkran. The winch was powered by a 10-horsepower electric motor. The hoisting block had two sheaves rigged with a $\frac{3}{4}$ -inch galvanized steel cable, and there were provisions for the manual operation of the winch. The crane was 48 feet wide and 22 feet, 8 inches high. (Patton Museum)



With the bottom of the turret basket raised above the chassis, the hoist is pulling the turret to the side of the tank. Several men are sitting on the tube to balance the rear-heavy turret. Below the turret, a crewman is bringing in a heavy-duty wooden sawhorse; when lowered, the turret would sit on two sawhorses. (Patton Museum)



Several crewmen wrestle with a partially hoisted Tiger turret at a maintenance company base. Two lifting lugs flanked the front of the turret, and a third was located at the upper center of the rear of the turret. Here, the crewmen have rigged a cable with hooks under the mantlet, with the front lugs holding the cable in place. (Patton Museum)



A crewman stands in the rear of the fighting compartment of a Tiger I with its turret removed. He is apparently making adjustments to the engine. To his left in the fighting compartment is the automatic fire extinguisher bottle. The wire mesh attached to the left radiator air intake grille is intended to keep debris from fouling the air intake.

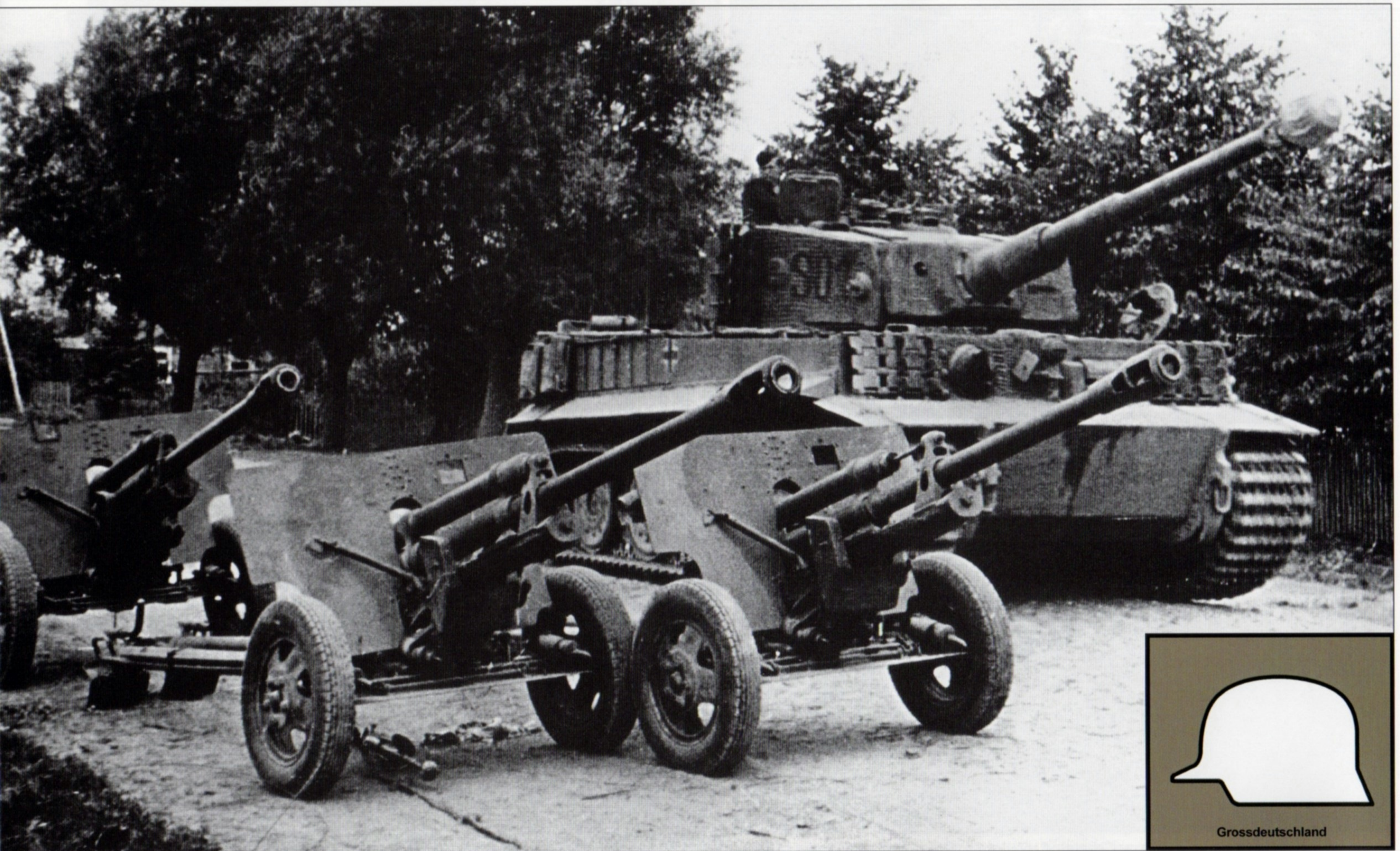


After removing numerous road wheels, this Tiger crew is well into a repair operation on the left running gear. With the Tiger's many interleaved road wheels, there was no quick and easy repair scenario for the running gear, save perhaps a damaged outer road wheel. (Armor Plate Press)

Mud was a constant vexation to Tiger I tanks, particularly to their intricate system of interleaved bogie wheels. A crewman appears to be using a stick to clear muck from between the left idler and the rear set of bogie wheels. The track has been parted; the lower portion of the track is lying on the ground.



Grossdeutschland



Beginning in 1943, the Grossdeutschland Division fielded a company of Tiger I tanks, soon expanding its Tiger unit to Abteilung 3 (3rd Battalion), Panzer Regiment Grossdeutschland. Here, a Grossdeutschland tank with tactical number S01 passes captured Soviet 76.2mm antitank guns in the Wilkowschken sector (today Vilkaviškis) in Lithuania. The tank shown here is a late-production Tiger I, making it likely that this photo was taken during the battles in the late summer of 1944. (Patton Museum)



A Tiger I of Abteilung 3, Panzer Regiment Grossdeutschland, passes a staff car in the Akhtyrka (now Okhtyrka) sector in the Ukraine in August 1943. The tank has seen rough service, judging by the caked mud, dented Feifel prefilter, bent side mud guard, missing rear mud guard, and bullet or shrapnel holes in the bottom of the left muffler shield.



Several Tiger I tanks, including tactical number B01, pass a line of SdKfz 251 half-tracks. The B prefix of the tactical number signified the 10th Company of the 3rd Battalion, reorganized from the former 3rd Company of schwere Panzer Abteilung 501. A shovel is stowed on the glacis of the front Tiger. (Patton Museum)

A vehicular-mounted crane removes the Maybach engine of a Tiger I belonging to the Grossdeutschland Division in the autumn of 1944. The Tiger's Maybach engine lacked the stamina to operate at the tank's specified speed for sustained periods, so engine repairs and replacements were frequent events.

The Bilstein 3-ton crane holds the Maybach engine suspended at the rear of the number A31 Tiger of Grossdeutschland. The tank has a coating of Zimmerit, and the rear end of the vehicle is covered in grime. Near the bottom of the winch housing of the crane are a large data plate and angle indicator.





Two Tigers from the Grossdeutschland Division are fitted with their transport tracks for shipment by railroad flatcar. The outer bogie wheels and the side mud guards also have been removed preparatory for rail shipment. Behind the front Tiger is an operational-track assembly. Two pairs of spare track links are attached to the front plate of the driver's compartment.

A crew changes tracks on Tiger A23 from the 2nd Platoon, 9th Company, 3rd Battalion, Grossdeutschland Panzer Regiment, in Romania in 1944. In the background is a Panther tank, the rear deck of which appears to be laden with segments of the vehicle's tracks. (Patton Museum)



Crewmen drape a German flag atop the turret roof of the whitewashed Tiger A23 of the 2nd Platoon, 9th Company, 3rd Battalion, Grossdeutschland Panzer Regiment. German tank crews commonly displayed the flag as aerial identification in order to prevent mistaken attacks by friendly Stuka dive bombers.

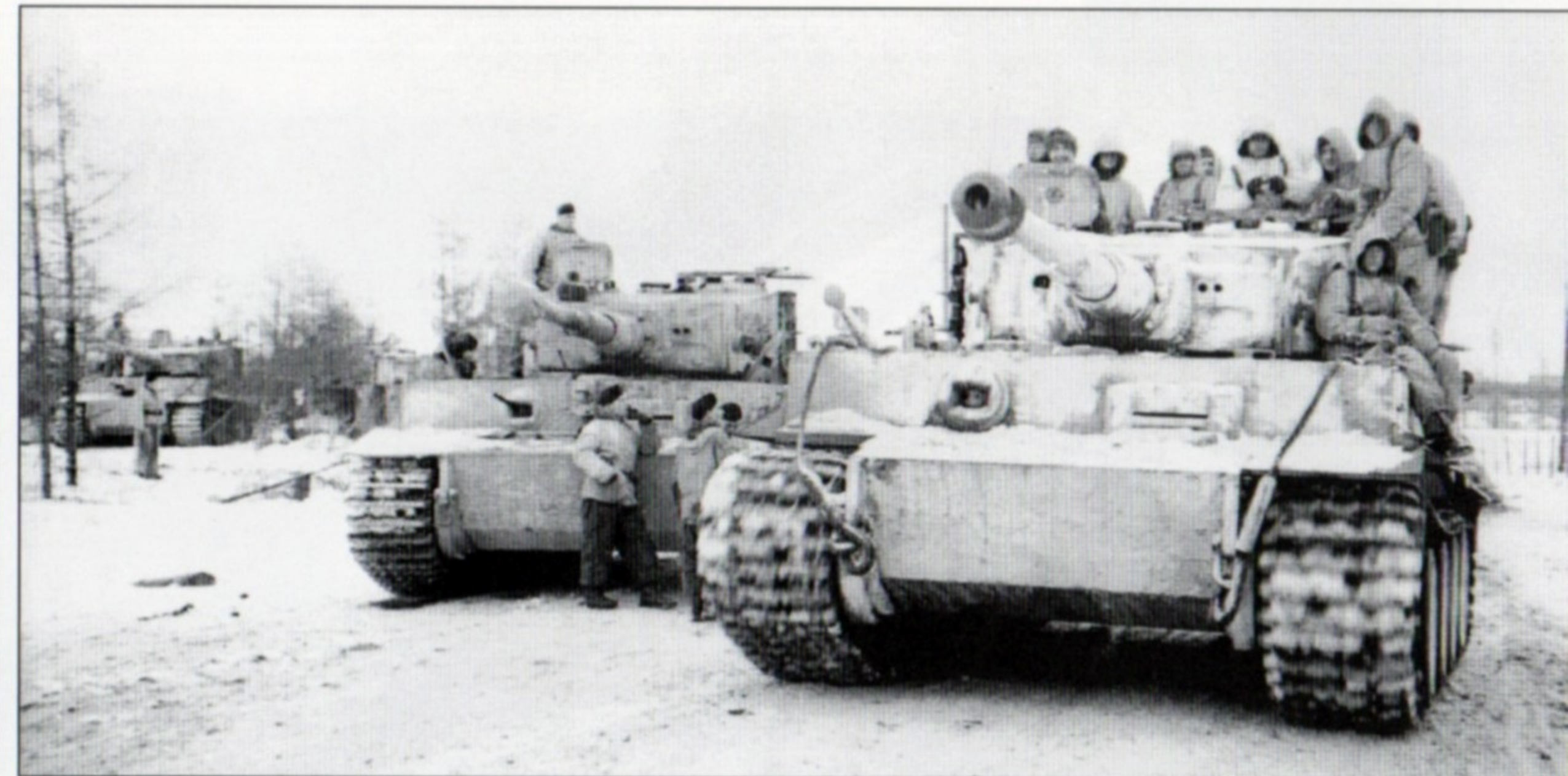
Tiger crewmen from Grossdeutschland change tracks on their vehicle. The narrow tracks (*Verladeketten*) used for railroad transport are installed on the left side, while on the right a narrow track is in the process of being installed. Visible at the tops of the road wheels is the steel rope that was secured to the hub of the sprocket and used to pull the track into place.



Schwere Panzer Abteilung 501



A Tiger I of schwere Panzer Abteilung 501 stands by during Operation Hubertus, a counterattack by the 256th Infantry Division on the Eastern Front in mid-March 1944. The photo offers a good view of the mottled appearance of the whitewash applied to the vehicle. Note the riddled muzzle cover. In the background is a PzKpfw IV.



Panzer grenadiers of the 256th Infantry Division hitch a ride on a Tiger I of schwere Panzer Abteilung 501 during Operation Hubertus on the Eastern Front in March 1944. Both Tigers have the late-type commander's cupola and binocular sight apertures in their mantlets. Both tanks are camouflaged with whitewash to match the snowy conditions.

A Tiger I of schwere Panzer Abteilung 501 and a supporting vehicle with Schürzen (supplemental side armor), possibly a Sturmgeschütz, are on the advance. The veteran Tiger exhibits a highly mottled appearance. The location of the single headlight centered on the driver's front plate dated to October 1943. (Patton Museum)



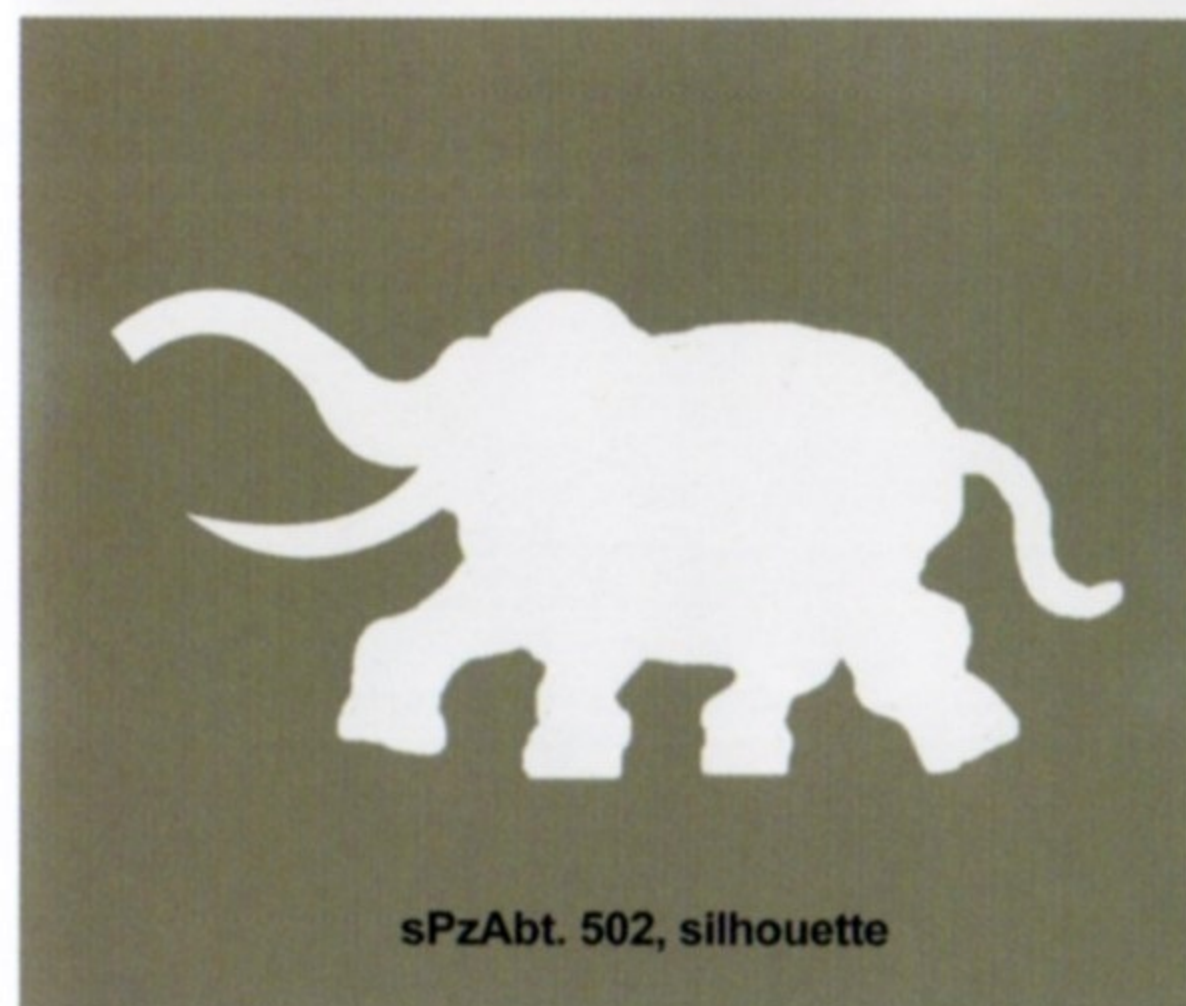
Although this Tiger appears to have become inextricably mired in mud, the crew subsequently recovered it by arranging timbers in front of it and driving it out under its own power. The vehicle was number 301 of schwere Panzer Abteilung 501. Numerous bullet holes are visible in the muffler shields and turret stowage box.



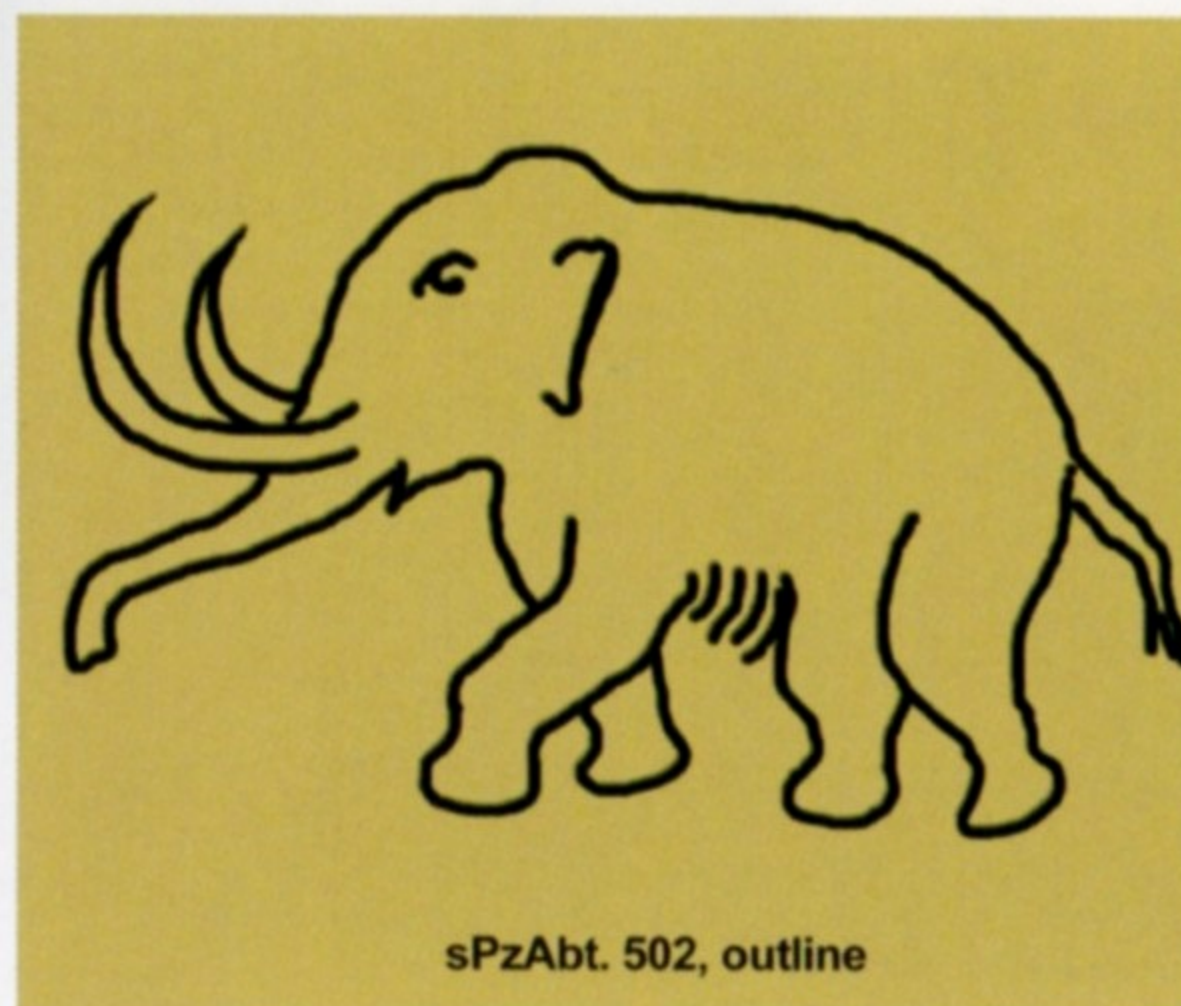
Schwere Panzer Abteilung 502



A Tiger I commander of schwere Panzer Abteilung 502 looks on as an officer gives instructions to crewmen during training exercises. The Tigers are early-production examples. To the front of the commander on the turret roof is a waterproof cover for the turret ventilator, with bullet cartridges and boxes lying next to it.

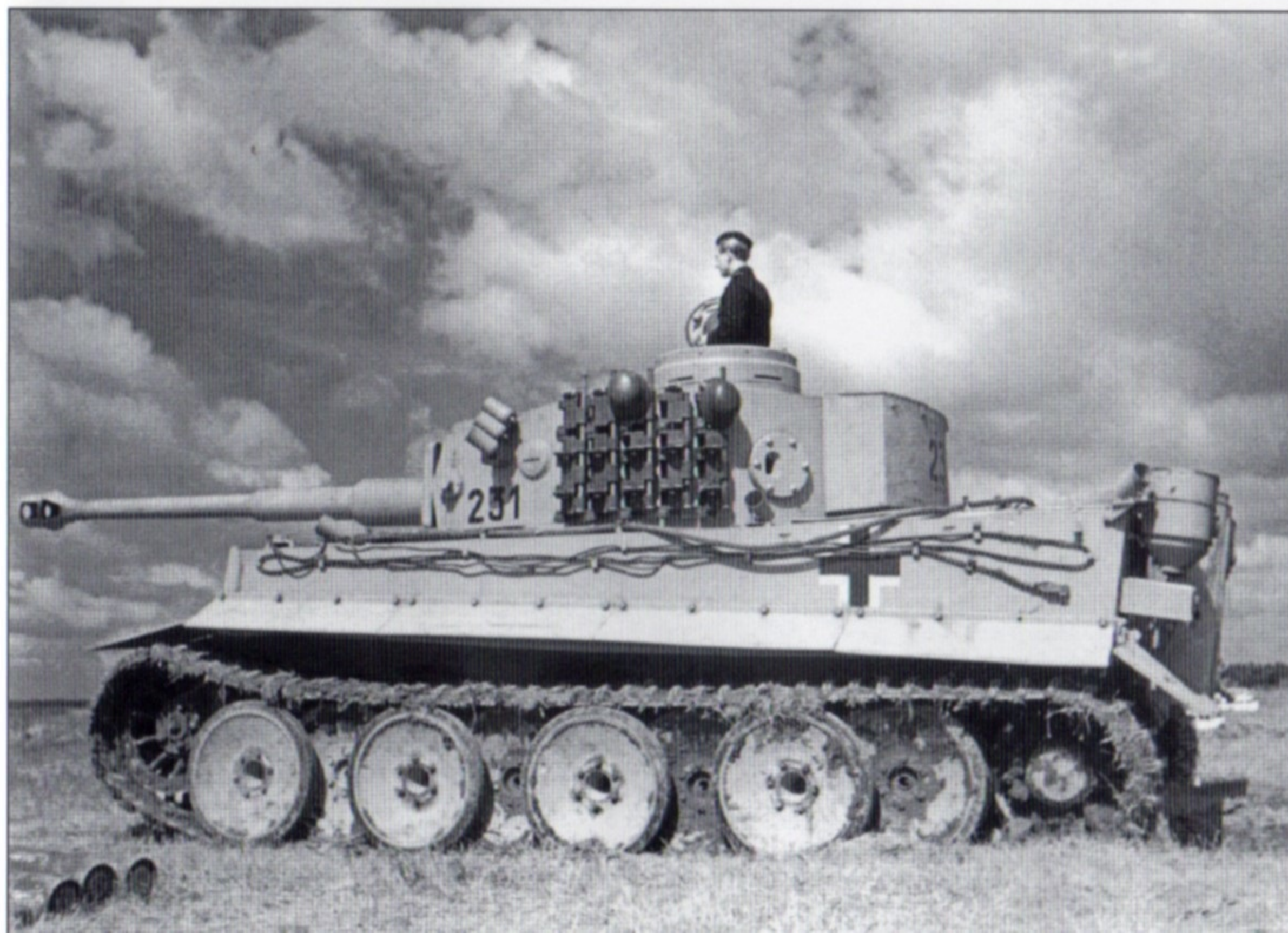


sPzAbt. 502, silhouette



sPzAbt. 502, outline

Tiger I tactical number 231 of schwere Panzer Abteilung 502 exhibits an overall color of Dunkelgelb (dark yellow) and wears the Balkenkreuz relatively far to the rear of the side of the hull. Two Stahlhelme (helmets) are strapped to the spare tracks on the side of the turret, and three S-mine dischargers are visible on top of the hull.



During training exercises, the 88mm main gun of an early Tiger I is elevated and prepared for firing as the commander watches through binoculars. Above the track tool box on the rear of the hull is the late-type Feifel prefilter, which exhibits a top half similar in shape to the lower half. An early arrangement of spare tracks is on the turret.



A Tiger I commander in an early-type cupola (Führerkuppel) observes his surroundings through binoculars. The cupola had five vision slots, in the interior behind which were glass vision blocks and their holders. In the foreground are three spare tracks and their upper stowage brackets. (Patton Museum)



Tiger I crews conduct firing exercises. To the front of the cupolas of the first two tanks are the raised doors of the loader's hatches. Next to the standing man's legs is the turret's pistol port, while on the edge of the deck to the front of the standing man is an S-mine discharger. There was no discharger on the right side center of the hull. (Patton Museum)

An early-production Tiger, number 323 of schwere Panzer Abteilung 502, pauses in a Soviet village. The trunks for a Feifel prefilter are present on the open cover of the engine compartment, but the prefilters have been removed from the rear of the tank. The camouflage pattern is unique.





A column of Tiger I tanks of the 3rd Company, schwere Panzer Abteilung 502, awaits orders to move somewhere on the Eastern Front. The tanks carry 200-liter barrels of fuel to extend their operating radius. Crude coats of whitewash have been applied to the tanks, which also exhibit coatings of Zimmerit.



This battle-tested Tiger of schwere Panzer Abteilung 502 carries a small, black tactical number 217. Numerous pockmarks are visible on the vehicle, possibly from hits from small-arms fire. The right front mud guard is completely missing. The outer ball of the front machine gun mount retains a dark color in contrast to the rest of the vehicle.

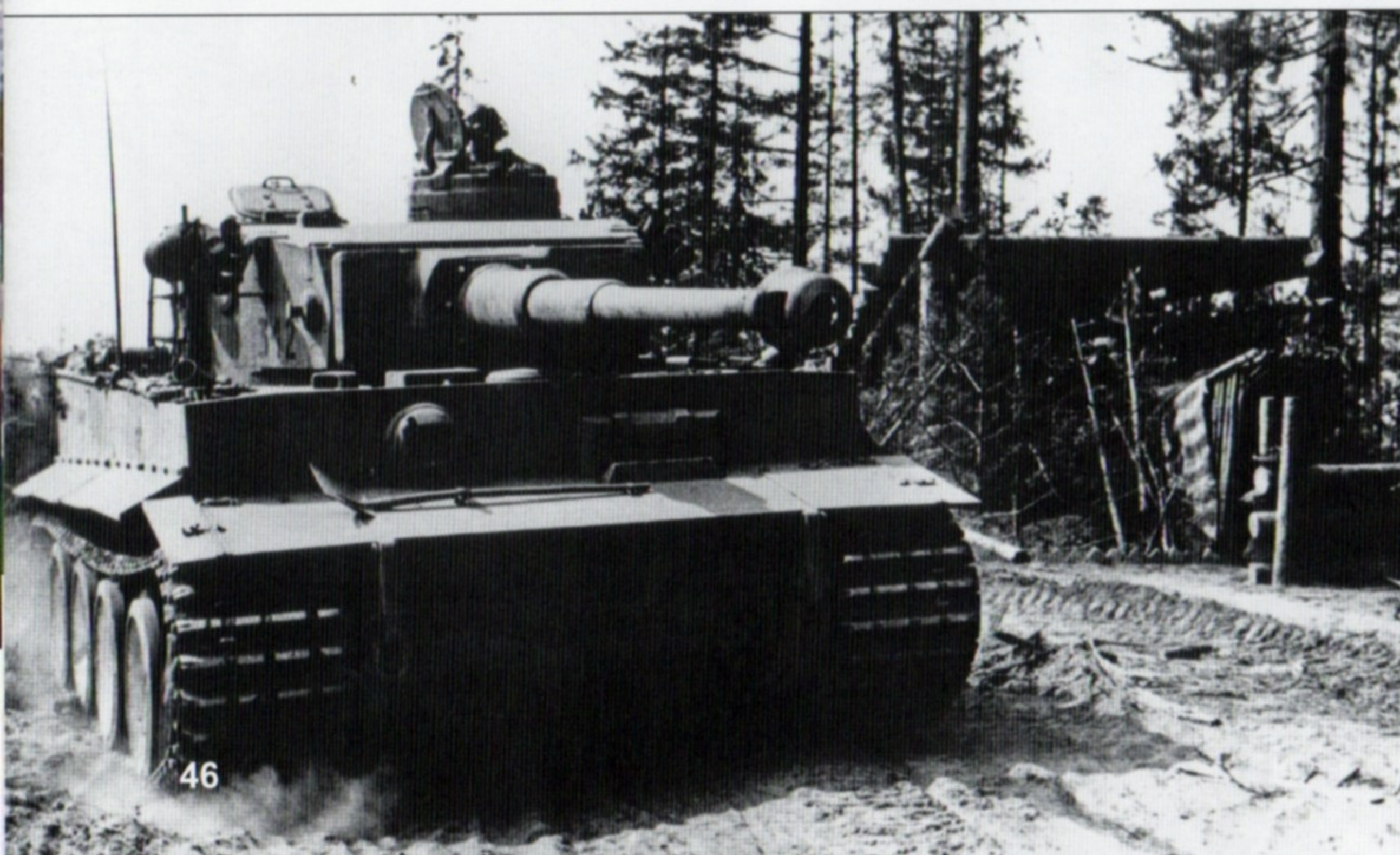
Several crewmen rest in the shade of a Tiger I of schwere Panzer Abteilung 502. Tow cables are attached to the front of the tank, suggesting the vehicle has been disabled and recovery efforts are about to begin. The use of other Tigers to tow a disabled Tiger was frowned upon. Usually, 18-ton half-tracks served that purpose. (Armor Plate Press)





A Fieseler Fi 156 Storch liaison airplane has just landed in a field near a Tiger of schwere Panzer Abteilung 502 undergoing a track-replacement operation. For ease of access, both front mud guards have been raised. Wooden beams have been placed below the hull, evidently to keep the vehicle from sinking into the soft ground. (Armor Plate Press)

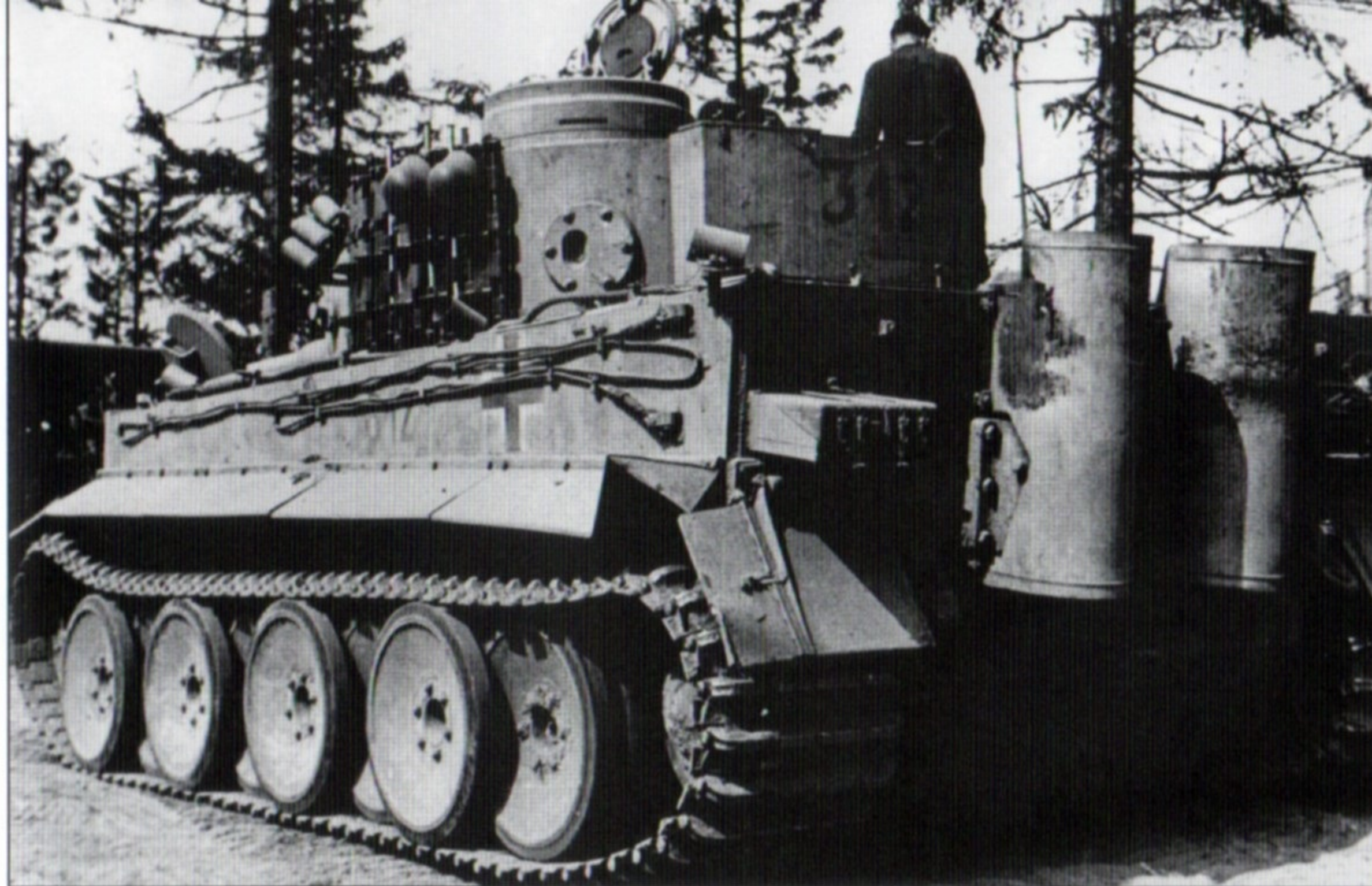
This Tiger I displays its tactical number, 312, toward the lower front corner of the turret. On the sides of the turret are smoke dischargers (Nebelwurfgeräte), which were installed on Tigers beginning in the last half of 1942. The curved arm on the outside of the cupola door was attached to a coil spring, acting as a door-opening assist. (Patton Museum)



Tiger number 312 churns up dust as it passes number 322 on the Eastern Front in the summer of 1943. Both vehicles were assigned to schwere Panzer Abteilung 502. The tactical number 312 is in small black numerals, while 322 is in large white numerals. Number 322 is lacking its side mud guards. S-mine dischargers are present on both tanks.

A right-side view of tactical number 312 of schwere Panzer Abteilung 502 shows that the tactical number has been repeated on the side of the hull—an uncommon practice. To the rear of the number, the white outlines of the Balkenkreuz are smudged from grime or paint overspray. An antenna is next to the turret. (Patton Museum)





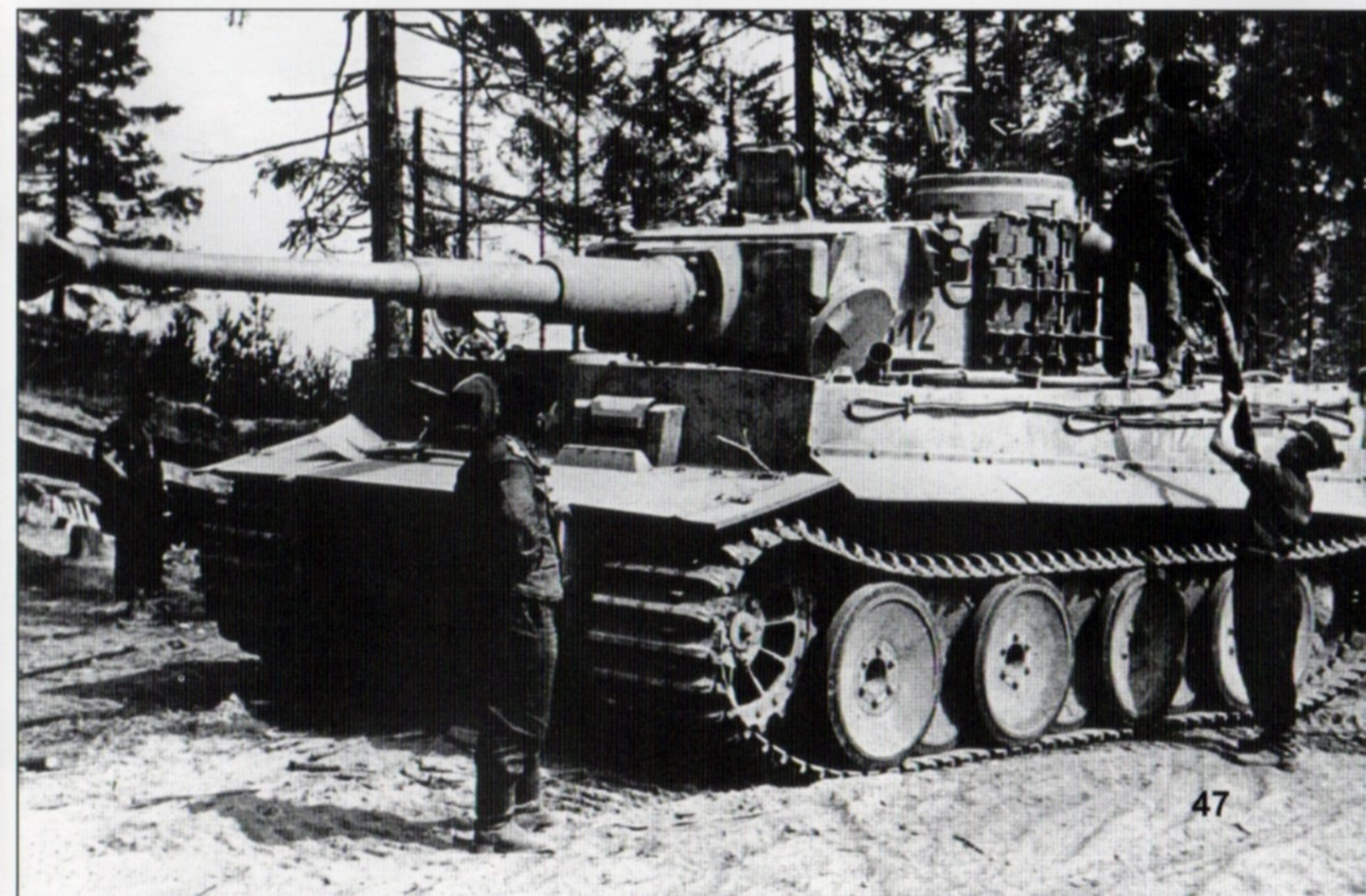
This left-rear look at the number 312 Tiger of schwere Panzer Abteilung 502 offers a close-up view of the track tool storage box and side and rear mud guards. The wire rope on the side of the hull was used to install tracks, using the drive sprockets as winch capstans. The muffler shields have suffered considerable wear. (Patton Museum)

Two men prepare to lift an 88mm round up to the man on the deck of the 312 Tiger. The Tiger I had internal storage provisions for up to 92 rounds of 88mm ammunition. An efficient, well-tuned logistical infrastructure was necessary to ensure that the Tigers were stocked in a timely fashion with ammunition and other supplies. (Patton Museum)



On the right rear of the hull of the 312 Tiger I is a jack, stowed horizontally. The rear S-mine discharger is aimed obliquely to the right front of the vehicle; often, these were observed pointing obliquely to the rear. This vehicle, chassis number 250235, was completed in May 1943. (Patton Museum)

The crewman at the left is watching the loading operation of Tiger tactical number 312. Just visible below the smoke dischargers on the side of the turret is the vision slit. It was cut into a circular piece of armor plate welded to the turret, and on the interior side of the assembly was a glass vision block. (Patton Museum)





In the foreground are wooden packing cases for 88mm ammunition. The Tiger I's main type of antitank ammunition was the Panzergranate 39, an armor-piercing capped type. High-explosive Sprenggranate rounds were used against softer targets. The hyper-velocity armor-piercing Panzergranate 40 was available in limited numbers. (Patton Museum)



A soldier hands an 88mm round to a crewman on the left side of the 312 Tiger I of schwere Panzer Abteilung 502. The tactical number 312 and the Balkenkreuz are faintly visible on the side of the hull. Also visible are the spare tracks on the turret and the arrangement of the brackets for holding the wire rope used in track installation. (Patton Museum)

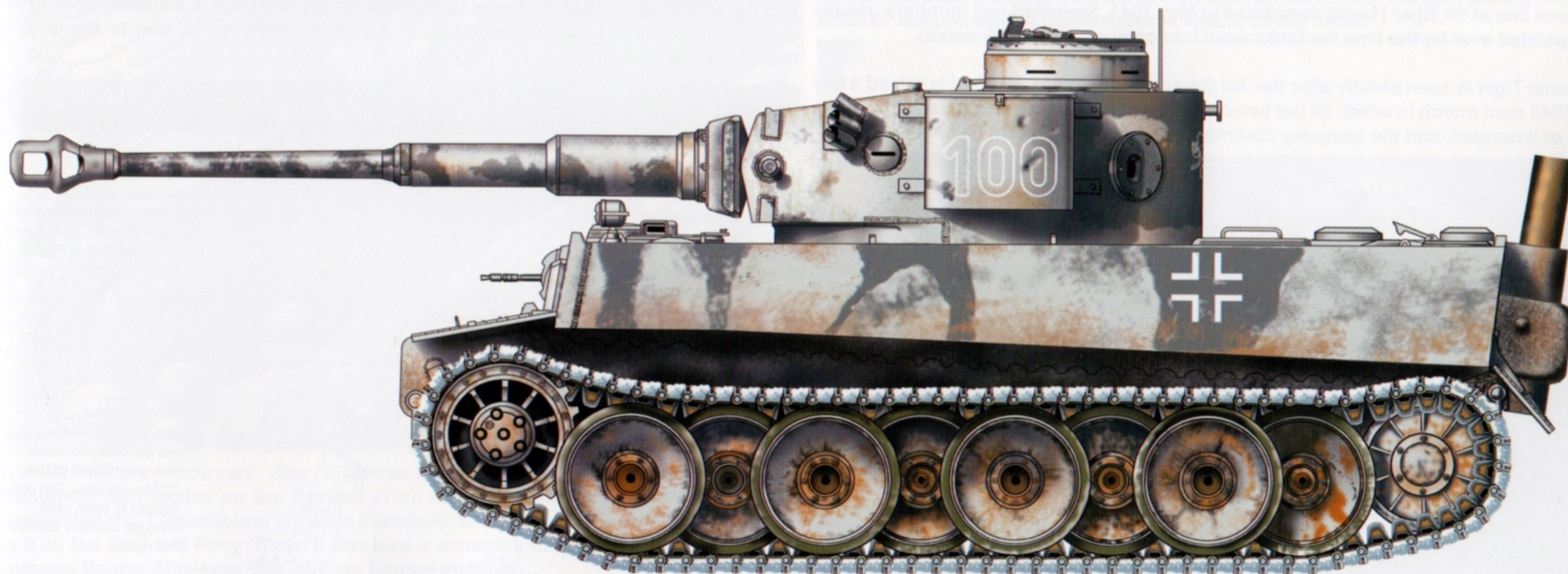


A crewman hands a round through the loader's hatch to another crewman within the turret. Inside the tank, the 88mm ammunition was stored in various racks located in the hull and hull sponsons. Visible in close-up toward the right is the array of three smoke dischargers (Nebelwurfgerät) and their mounting bracket. (Patton Museum)



The camouflage of the number 311 Tiger I of schwere Panzer Abteilung 502 is seen up close. Depending on the season, a shade of green, brown, or a combination of the two would be applied over the Dunkelgelb base color. Next to the front machine gun mount is the outline of a mammoth, the battalion insignia. (Patton Museum)

Painted Feldgrau with a whitewash overlay, this Tiger, assigned to the commander of 1st Company, sPzAbt. 502, became the first Tiger captured intact by the Soviets in January 1943. The stowage bin on the turret side was fabricated by troops in the field.





Tiger crewmen clean the barrel of the 88mm KwK 36 L/56 cannon. The tank's hull number, 250196, is stenciled next to the driver's armored visor and indicates that the tank was one of 50 Tiger I tanks completed in May 1943. Stenciled hull numbers usually were painted over by the time the tanks went into combat. (Patton Museum)

The same Tiger is seen shortly after the 3rd Company of sPzAbt. 502 had survived a late July 1943 road march in which all but two of its Tigers were damaged, 30 crewmen were killed or wounded, and the company commander was killed. (Patton Museum)

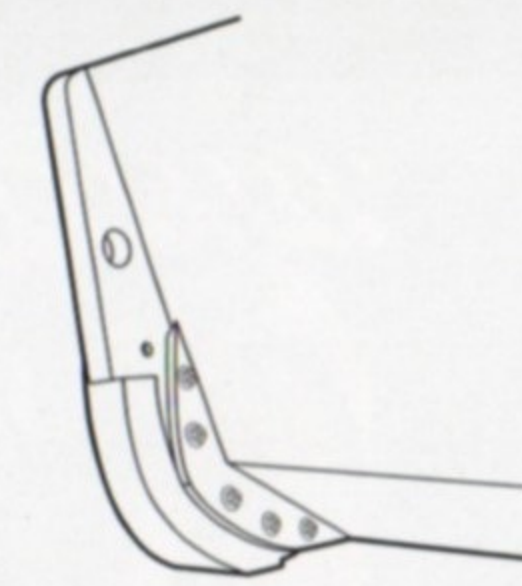
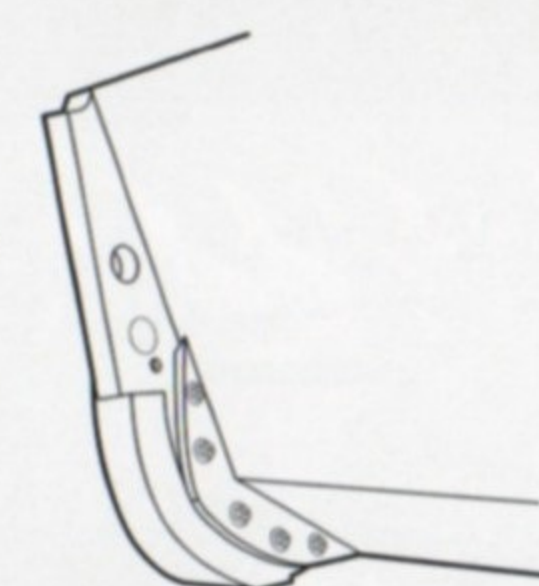


Two crewmen prepare to go swimming as a Tiger crew from the 3rd Company, schwere Panzer Abteilung 502, takes a brief respite on the southern shore of Lake Ladoga near Leningrad in August 1943. The man to the right on the rear deck is evidently sorting out equipment from the turret stowage boxes. An S-mine launcher is next to the driver's hatch. (Patton Museum)

Final Drives

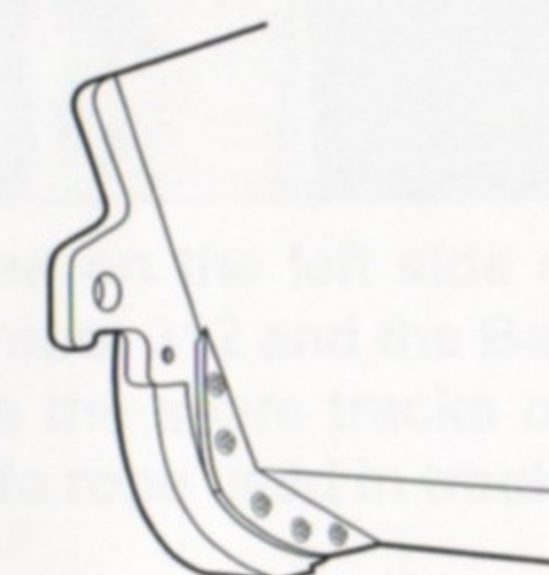
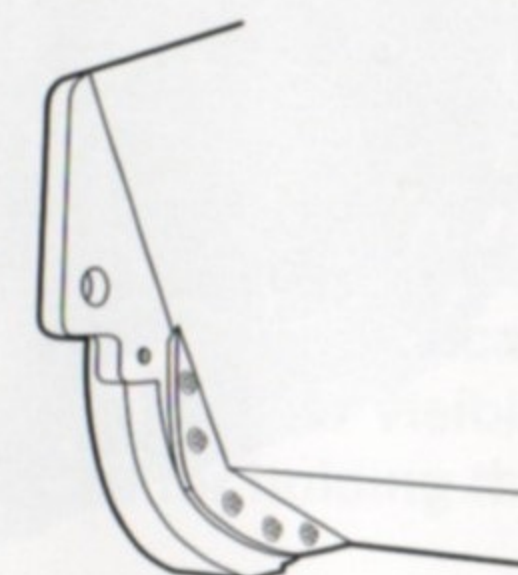


September 1942.
Very early production hulls still have the cutout for the Vorpanzer. A welded plug fills the hole for the Vorpanzer arm. An Armor ring is added for the final drive.



October 1942.
The front hull extension has a familiar shape and contains only a single hole.

December 1942.
The hull side plates are extended in front to allow the "U"-shaped tow shackles free movement.



January 1944.
The hull side extensions are cut away to allow free movement of the "C" tow hooks. The older design is seen until chassis number 250829 in February.

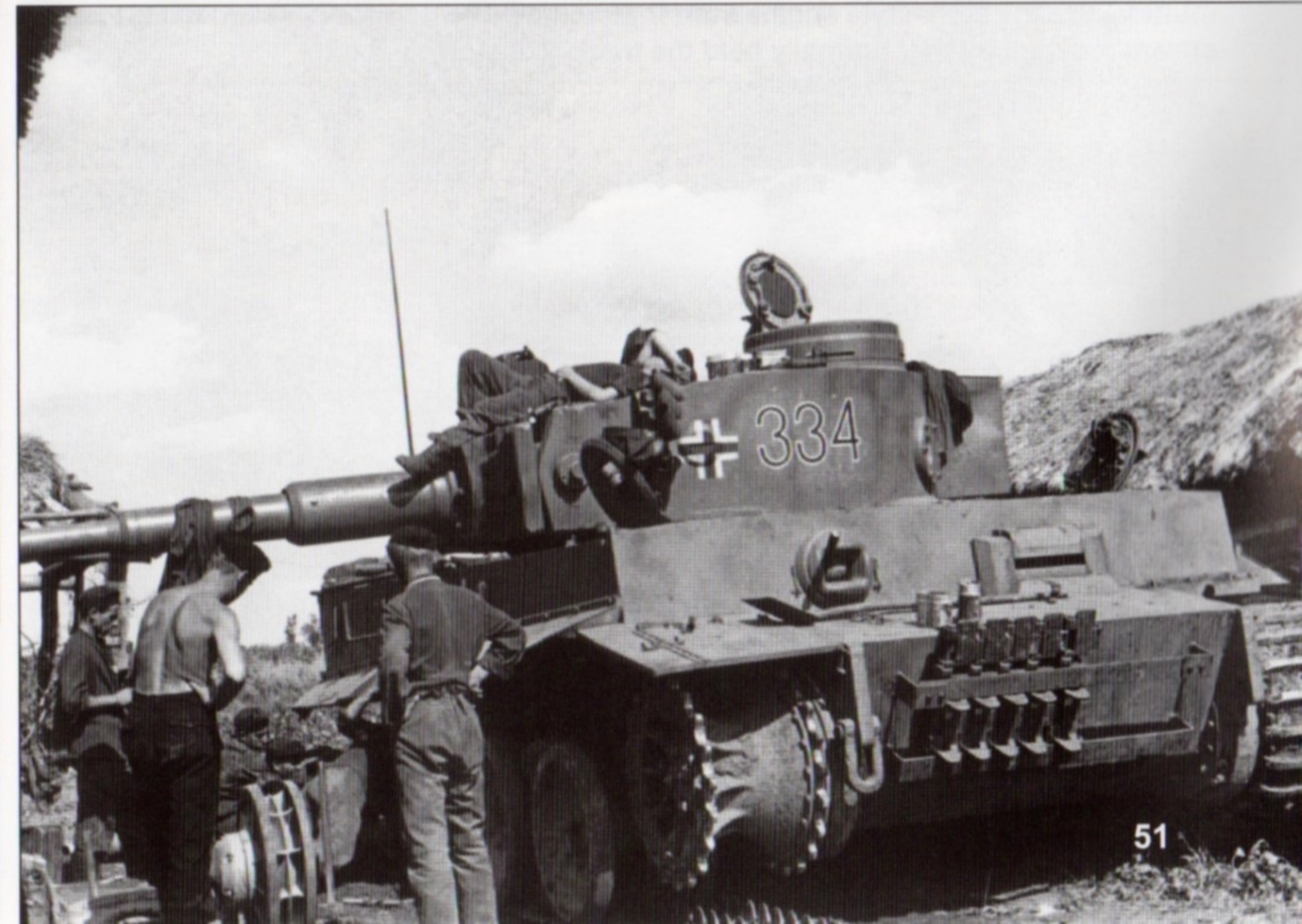
Schwere Panzer Abteilung 503



Turkish military observers view a German demonstration of the Reich's military equipment and tactics on the Eastern Front in June 1943. This event was officially designated the *Türkenübung* (Turkish Exercise), but the Germans facetiously referred to it as the Dog and Pony Show. It included a demonstration of this Tiger I tank from schwere Panzer Abteilung 503. (Military History Institute)



A Tiger from the 3rd Platoon, 3rd Company, schwere Panzer Abteilung 503 undergoes repairs to the running gear. On the ground next to the shirtless crewman is the idler wheel. Two steel brackets hold the spare tracks on the front of the hull; usually, only one bracket was installed. A Balkenkreuz is visible on the turret.





Another photo of the number 334 Tiger of schwere Panzer Abteilung 503 shows the vehicle undergoing repairs to the right side of its running gear. The left front mud guard is missing. To the side of the tank are an idler wheel and several bogie wheels. The man to the right is pumping fuel from a barrel. (Patton Museum)

In another view of Tiger 123 undergoing ammunition replenishment, details of the rear of the vehicle are visible. Both of the muffler shields have been removed. Between the mufflers are the early-style engine starter attachment and the jack. A liquid container is stowed on the tray that normally held the track-tool stowage box.



A crewman passes an 88mm round to a comrade in the turret of Tiger tactical number 123 of schwere Panzer Abteilung 503. Between the vision slit and the lifting lug on the side of the turret is a gouge from a large-caliber artillery round that failed to penetrate the armor.

The number 123 Tiger of schwere Panzer Abteilung 503 was photographed in January 1943, just days after its arrival in occupied Soviet territory. An irregular coat of whitewash has been brushed over the vehicle's Dunkelgrau (dark gray) base color. The painter took pains to leave the vehicle's tactical number and the Balkenkreuz unobscured.





This is one of a series of photographs of Tiger 332 of schwere Panzer Abteilung 503 after it had become mired while crossing boggy ground. The vehicle had already seen combat and bore a number of bullet holes and shell gouges. Two identification crosses on the turret stowage box were typical for this battalion at that time. (Armor Plate Press)

When a Tiger I became mired, it usually took two Tigers to pull it free. Such is the case with Tiger I tactical number 332 of schwere Panzer Abteilung 503, which became stuck in a bog on the Eastern Front. In addition to the Tiger in the foreground, another one out of the view reportedly participated in pulling the stuck Tiger free.



Another photograph of Tiger 332 during recovery operations shows one crewman adjusting a tow cable while another looks on. Gouges from projectiles are visible on the sleeve over the 88mm gun barrel, on the plate in front of the front machine gunner's compartment, and on the mantlet near the binocular periscope openings. (Armor Plate Press)



A soldier uses a compressed-air spray gun with the paint reservoir on top to apply camouflage to a Tiger. He has not bothered to remove the shovel from the glacis. Often, when a Tiger was painted in the field, the painter would spray the camouflage colors right over equipment and tools stowed on the tank. (Armor Plate Press).

Three Tiger crewmen from schwere Panzer Abteilung 503 relax somewhere on the Eastern Front on a warm day in 1943. To the right, the front gunner/radio operator's hatch door is open, revealing the periscope guard on its top. The driver's and front gunner's periscopes were fixed at an oblique angle. (Patton Museum)



Beginning in 1943, Olivgrün (olive green), Rotbraun (reddish brown), or a combination of the two were applied as camouflage over the Dunkelgelb (dark yellow) base paint. Ideally, the season of the year would dictate which colors were used. In the fall, for example, Rotbraun would be the preferred camouflage color. (Armor Plate Press)

3rd SS Panzer-Grenadier Division Totenkopf



"Totenkopf" outlined



"Totenkopf" subdued

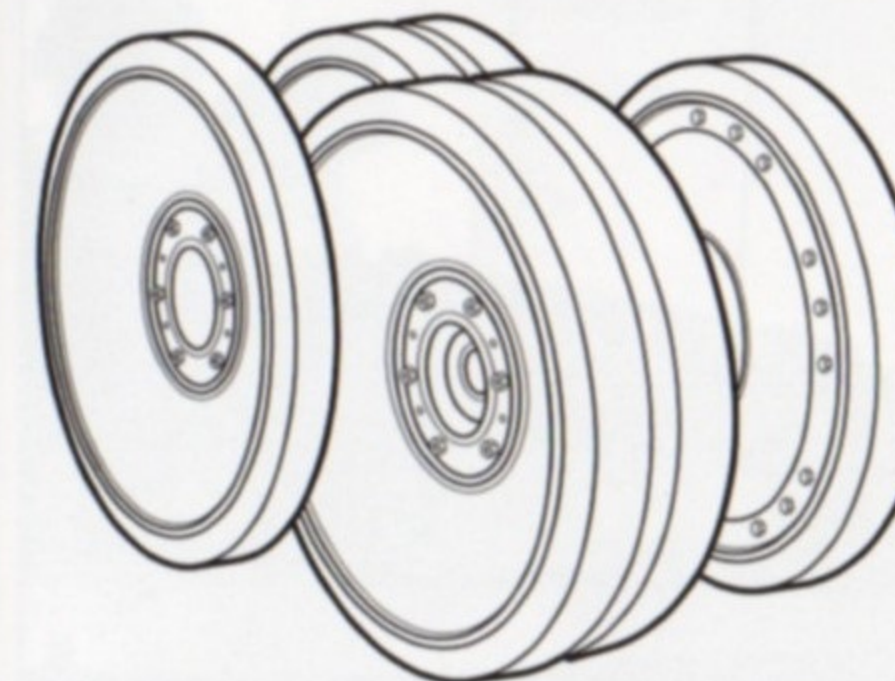


A column of Tiger I tanks of 9 schwere SS Panzer Kompanie "Totenkopf" heads to the Mius sector, following the Battle of Kursk in August 1943. The lead tank appears to have suffered a non-penetrating hit on the plate to the front of the driver's compartment. Throughout the war the Germans relied on horse transport. (Military History Institute)

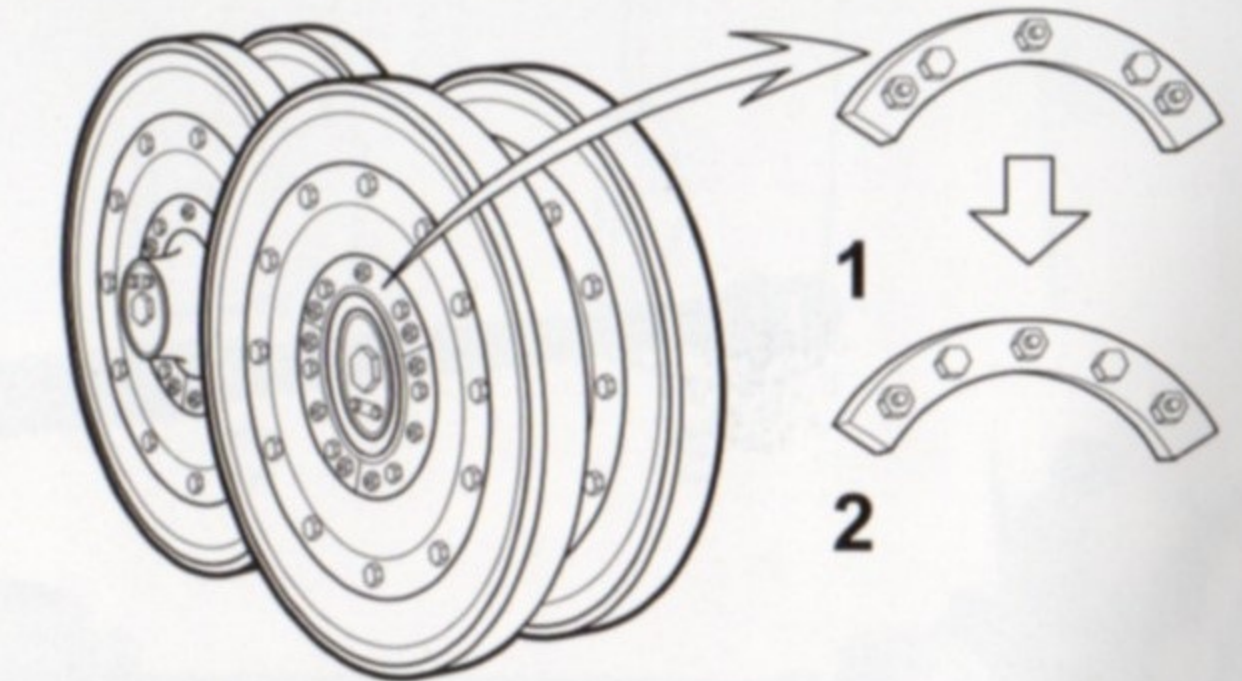
Men of 9 schwere SS Panzer Kompanie "Totenkopf" change the barrel of the 88mm gun of a Tiger turret positioned on beams atop fuel drums. The muzzle brake is not installed on the tube. The mantlet has a single aperture for the gunner's sight, which in early spring 1944 replaced the previous two apertures for a binocular sight.



Road Wheels



Tigers use conventional rubber-tired road wheels up until chassis 250821, shipped in February 1944. Six bolts mounted the tires until February 1943, when an additional 12 smaller bolts were added. Then, in April 1943, the mounting was changed to a total of 12 larger bolts.

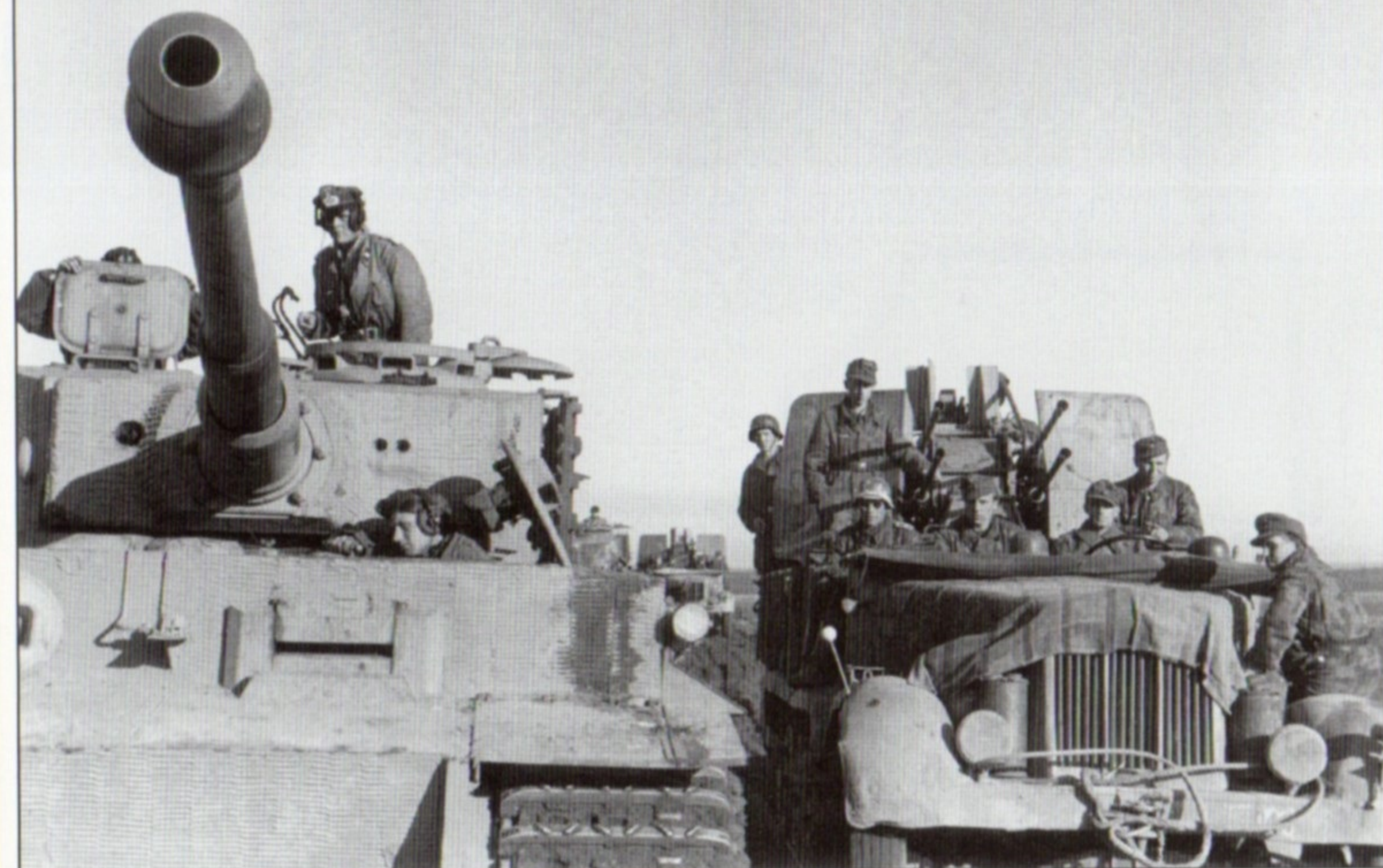


Maintenance issues and rubber shortages prompt the introduction of steel-tired road wheels to the Tiger in February 1944. At the same time, the suspension layout is changed from three roadwheels per station to two. In April 1944 the roadwheel-to-hub bolt pattern changes from the design shown here as 1 to the pattern shown in 2.

Schwere Panzer Abteilung 505



Tiger tactical number 300 displays on its turret the rather ornate insignia that schwere Panzer Abteilung 505 adopted in early 1944: a charging knight on horseback. This Tiger is equipped with steel-tired road wheels. Tree trunks carried on the sides of the hulls were used as unditching beams.



Enemy fighter-bombers became an increasing menace to German armor as World War II proceeded. This mid-production Tiger I is accompanied by a potent anti-aircraft vehicle, the 2cm FlaKvierling 38 auf Fahrgestell Zugkraftwagen 8t (SdKfz 7/1), comprising quad-20mm automatic cannons in an open turret on a modified 8-ton halftrack.

A Tiger of schwere Panzer Abteilung 505 restocks its ammunition during the Battle of Kursk. A tree trunk is lashed to the side of the hull. Standing by in the background is Tiger number 223. Rather than a full row of spare track links in the rack at the front of the hull, there are separate sections of two and three links. (Patton Museum)



Schwere Panzer Abteilung 506



A whitewashed Tiger I of the 2nd Company, schwere Panzer Abteilung 506, receives a restock of 88mm ammunition in the winter of 1943-1944. The battalion fought on the Eastern Front until August 1944, when it was reequipped with the Tiger II and deployed on the Western Front, seeing action at Arnhem and in the Ardennes Offensive.

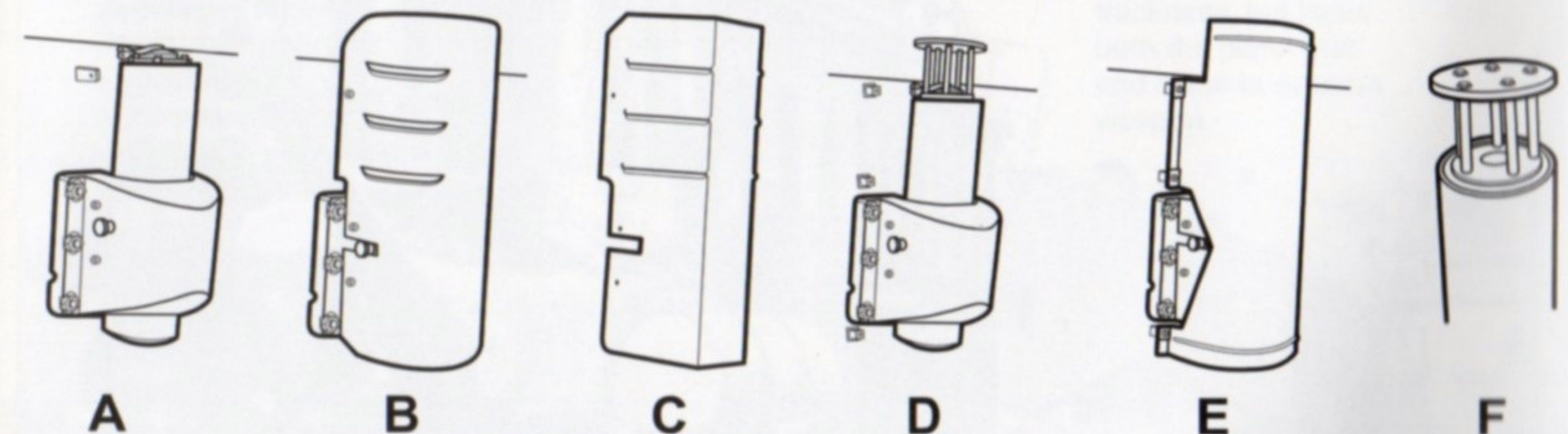


Tigers of schwere Panzer Abteilung 506 proceed down a narrow, muddy lane in a Soviet village. The white number 6 on the turret probably indicates that this vehicle belonged to the 1st Company, since white typically indicated that company in the 506th Battalion. (Armor Plate Press).



sPzAbt. 506

Exhaust Progression



- A: This configuration was the result of the introduction of the exhaust flapper rain cap in August 1942.
- B: SPzAbt. 501 shop personnel fitted this type of exhaust shield to their Tigers in North Africa.
- C: Some of the guards were squared, rather than rounded.
- D: In January 1943, a fixed rain cap above the exhaust outlet was introduced.
- E: At the same time, a sheet metal shield began to be factory installed over the armored covers and exhaust.
- F: In October 1943, the original flapper rain cap was eliminated from production.

Schwere Panzer Abteilung 507



sPzAbt. 507

Another photograph was taken of the Tiger tank on a street in Ternopil', Ukraine. Its tracks are the early type. The spare track links next to the front machine gun mount and the driver's visor, as well as those stored on the front of the lower hull, would have given a degree of extra protection to the tank from frontal fire. (Armor Plate Press).



German troops pass a Tiger tank sitting on a street in Ternopil', Ukraine. The tank carried fuel drums as a convenient means of refueling the vehicle but would have jettisoned them before going into combat. This Tiger has the late-type commander's cupola, which has a lower profile than the original cupola. (Patton Museum)

A soldier in a SdKfz 251 half-track hands an 88mm high-explosive round to a crewman on a Tiger I belonging to schwere Panzer Abteilung 507 on the Eastern Front. On the rear of the Tiger are a bucket and a "jerry can" liquid container, which are fastened to the vehicle with a piece of twisted wire.

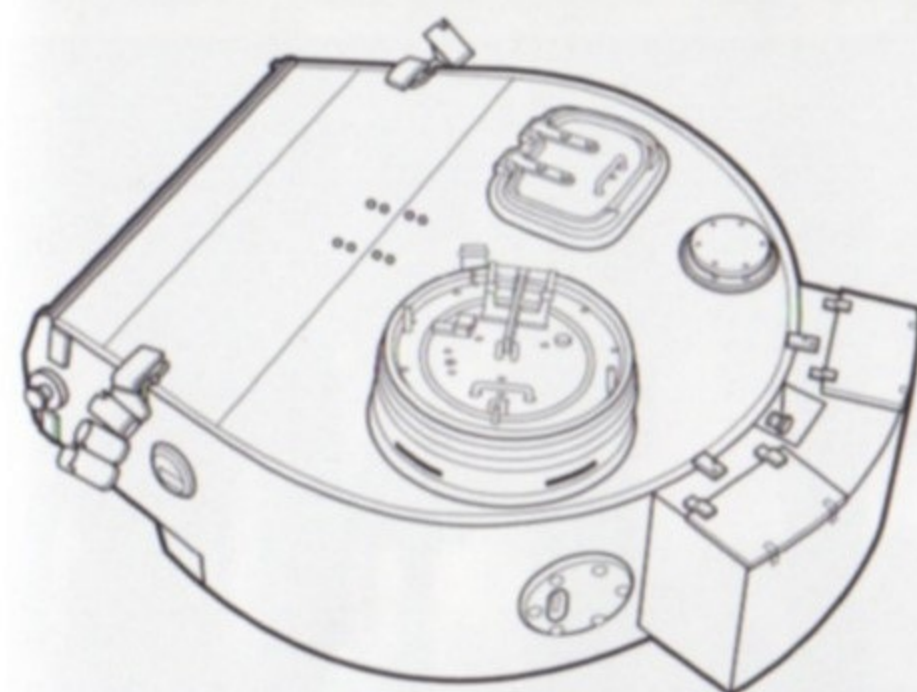


Schwere Panzer Abteilung 510

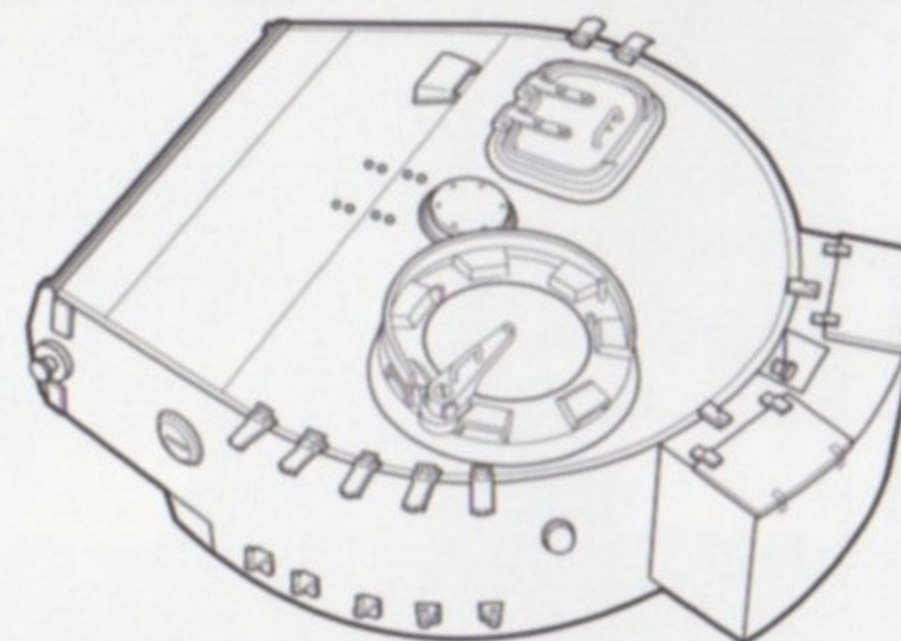


The number 124 Tiger of schwere Panzer Abteilung 510 proceeds through a field of wildflowers with infantrymen following. The battalion was established late in the war, on 10 June 1944. With the turret traversed to the left, the tactical number is visible near the turret stowage box: a placement peculiar to this battalion. (Patton Museum)

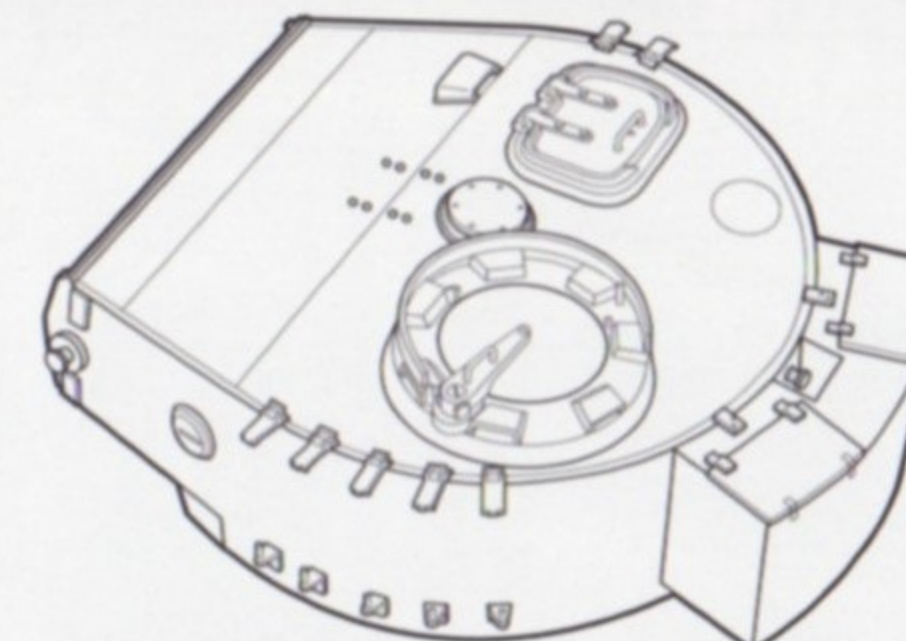
Turret Developments



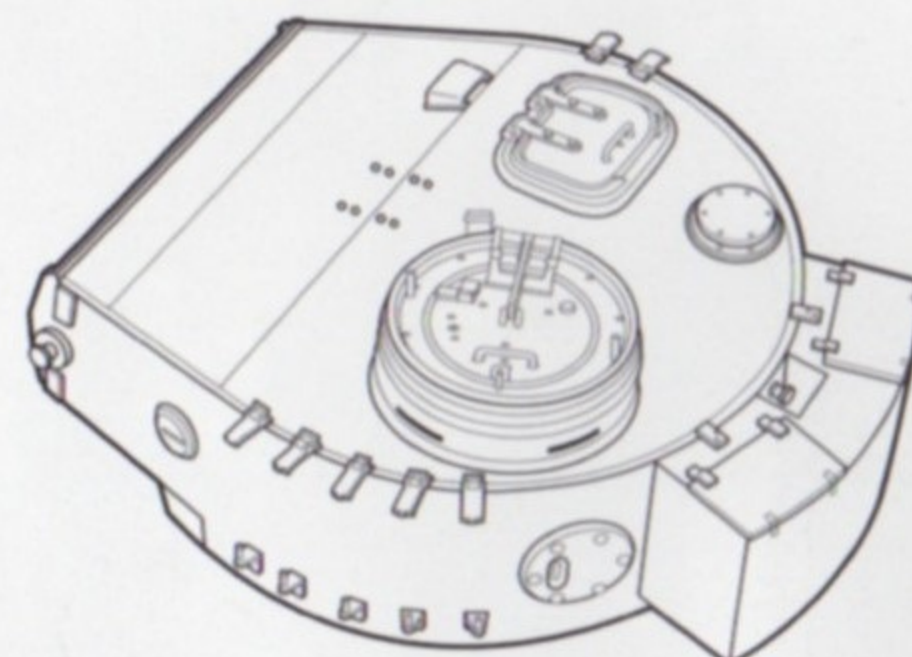
The initial turret features a drum cupola, rear-mounted early ventilator, and smoke dischargers.



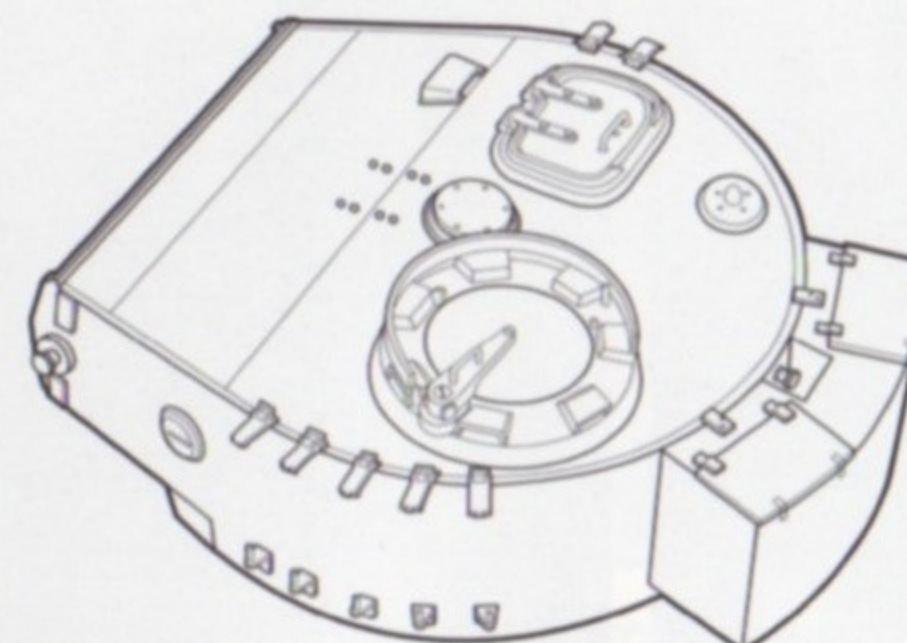
With the third turret, a cast cupola with seven periscopes replaces the drum cupola and a smaller pistol port is introduced. The ventilator is relocated.



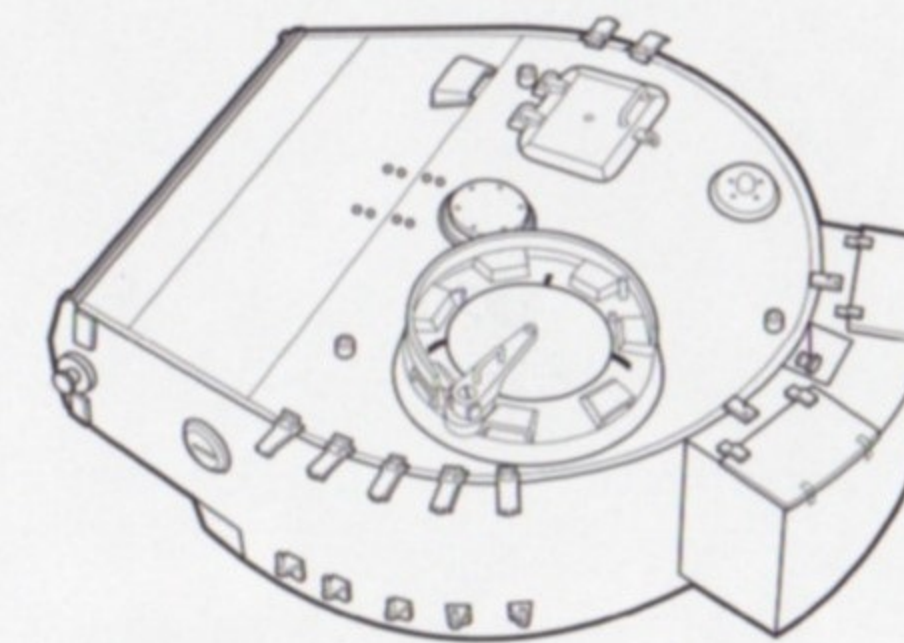
An interim turret uses the earlier roof thickness, but lacks both the pistol port and close-in defense weapon.



The second turret style eliminates the smoke dischargers, but adds spare track link brackets on the turret side. A periscope is added in front of the loader's hatch.

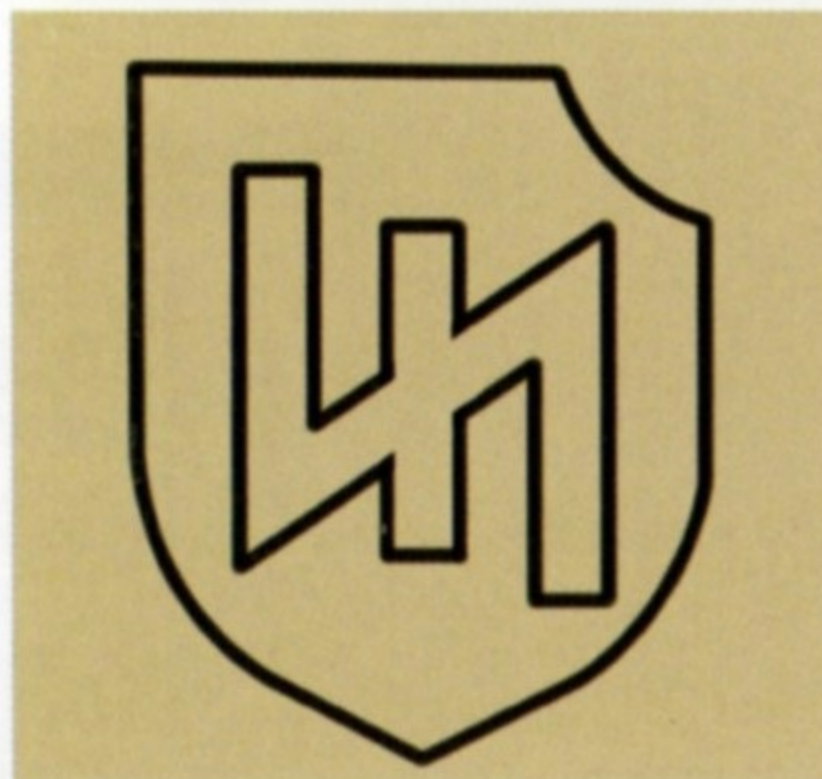


The pistol port is eliminated from the fourth turret and a close-in defense weapon is added to the rear of the turret roof. The turret roof is made thicker, and extended slightly.



The final turret configuration features a roof made of two armor plates (rather than one bent plate), a new loader's hatch, and three *Pilze* (sockets). Drain slits are added to the cupola.

Das Reich



Das Reich standard insignia



Das Reich "Springing Demon" was the unofficial symbol adopted after Khar'kov

(Top) Das Reich standard insignia.
(Bottom) Das Reich temporary insignia was used during Operation Citadel (Kursk Campaign).



Photographer Friedrich Zschäckel captured this view of troops of 2nd SS Panzer-Grenadier-Division "Das Reich" accompanied by a Tiger I during Operation Citadel in mid-1943.



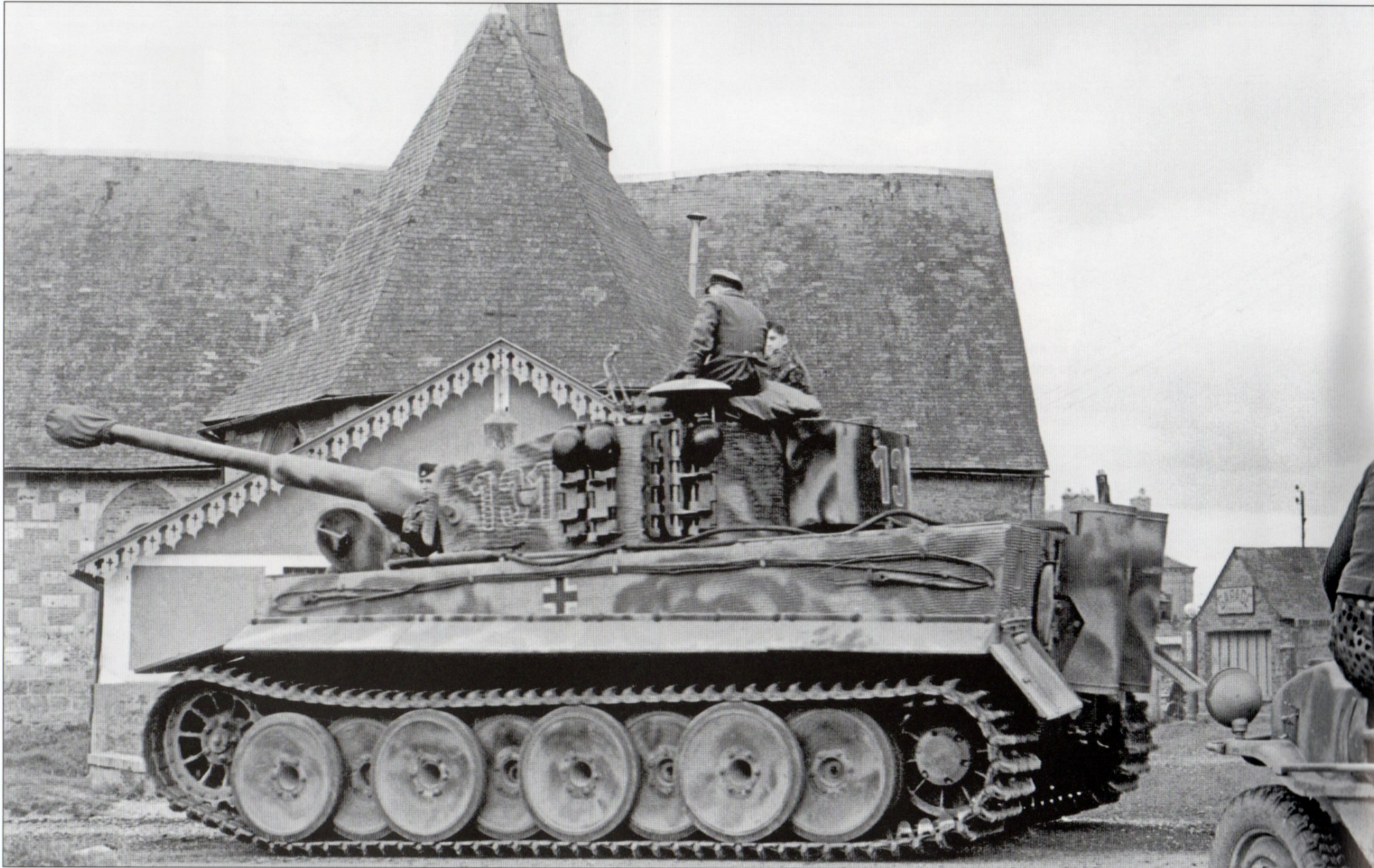
One of the Das Reich Division's Tiger tanks, tactical number S13, advances up a rise during Operation Citadel – the Battle of Kursk. The small, white symbol to the side of the front machine gun mount was that division's temporary symbol during Citadel, devised to confuse the Soviets. (Patton Museum)

Two Tigers of 2nd SS Panzer Grenadier Division "Das Reich" advance through a forest near Kirovograd, (now Kirovohrad) in central Ukraine, in December 1943. Two hits by a Soviet anti-tank rifle are faintly visible between the machine gun and the edge of the hull of the tank in the foreground.



The Western Front

Schwere SS Panzer Abteilung 101



Tiger 131 of the 1st company, schwere SS Panzer Abteilung 101, pauses next to a church in Normandy, France. Commanding the tank is Untersturmführer Walter Hahn. A very cursory camouflage color has been applied over the Dunkelgelb base color.



British forces knocked out this Tiger 1 of schwere SS Panzer Abteilung 101 on Rue Pasteur, Villers-Bocage, Normandy, on 13 June 1944. To add insult to injury, the Tiger and a PzKpfw IV next to it were further ravaged during the Allied bombing that destroyed the town on June 30. A British photographer recorded the scene on August 5.



1 SS Panzer Division - Khar'kov



1 SS Panzer Division



sSSPzAbt. 101

Troops of the British 10th Durham Light Infantry fight next to a knocked-out Tiger I at Rauray, Normandy, on 28 June 1944. The tank, tactical number 214, had been commanded by Unterscharführer Karl-Heinz Warmbrunn of schwere SS Panzer Abteilung 101. The smooth square in the Zimmerit on the frontal plate held the 1st SS Panzerkorps insignia.





During the 13 June 1944, Battle of Villers-Bocage in Normandy, a Sherman Firefly knocked out Tiger tactical number 121 of the 1st Company, schwere SS Panzer Abteilung 101, by scoring a direct hit on the engine compartment. The crew, commanded by Obersturmführer Winfried Lukasius, was able to escape from the stricken tank. (Patton Museum)

This Tiger of schwere SS Panzer Abteilung 101 was knocked out by British forces in Villers-Bocage on 13 June 1944. It is sitting at the intersection of Rue Jeanne Bacon and Rue Saint-Emile Sanson. On the right side of the frontal plate is the unit symbol of the 1st Company: an S inside a rhomboid with a 1 to the side. (Patton Museum)



Chickens pick at the debris around the remains of Tiger number 121 of schwere SS Panzer Abteilung 101 in Villers-Bocage. Next to the shovel is one of the Tiger's large tow hooks; both pieces of equipment had been stored on the top of the hull, adjacent to the driver's hatch. At the top are the loops at the ends of a tow cable. (Patton Museum)

Schwere SS Panzer Abteilung 101 was heavily engaged in the Normandy Campaign and boasted several prominent members, including SS-Hauptsturmführer Michael Wittmann. SS-Junker Erwin Asbach commanded Tiger 331. The external travel lock for the 88mm gun at the right rear of the deck was introduced in April 1943 and discontinued in February 1944. (Patton Museum)





A schwere SS Panzer Abteilung 101 Tiger, tactical number 232, commanded by SS-Unterscharführer Kurt Kleber, gives a tow to number 231, commanded by SS-Standarten Oberjunker Heinz Belbe. Tigers were not supposed to tow other Tigers except in extraordinary situations, since towing badly strained the engine. (Patton Museum)

SS-Unterscharführer Kurt Kleber (right) leans against the turret of the number 232 Tiger of schwere SS Panzer Abteilung 101 the day after the Battle of Villers-Bocage. The crewmen appear wary, since their Tiger was towing another Tiger and was therefore quite vulnerable to the very real threat of Allied Jabos (fighter-bombers). (Patton Museum)



In another photo of Tiger 232 of schwere SS Panzer Abteilung 101, SS-Unterscharführer Kleber stands to the right, wearing an overcoat. Toward the side of the plate in front of the driver's and radio operator's compartment is the insignia of the I SS Panzerkorps, two crossed keys in a shield, with two crossed oak leaves below.



Patterns of the Zimmerit are visible in this close-up view of a Tiger I of schwere SS Panzer Abteilung 101. Applied with serrated trowels, Zimmerit was a paste composed of barium sulfate, polyvinyl acetate, ochre pigment, zinc sulfide, and sawdust. The corps symbol on the frontal plate is on a square area devoid of Zimmerit. (Patton Museum)

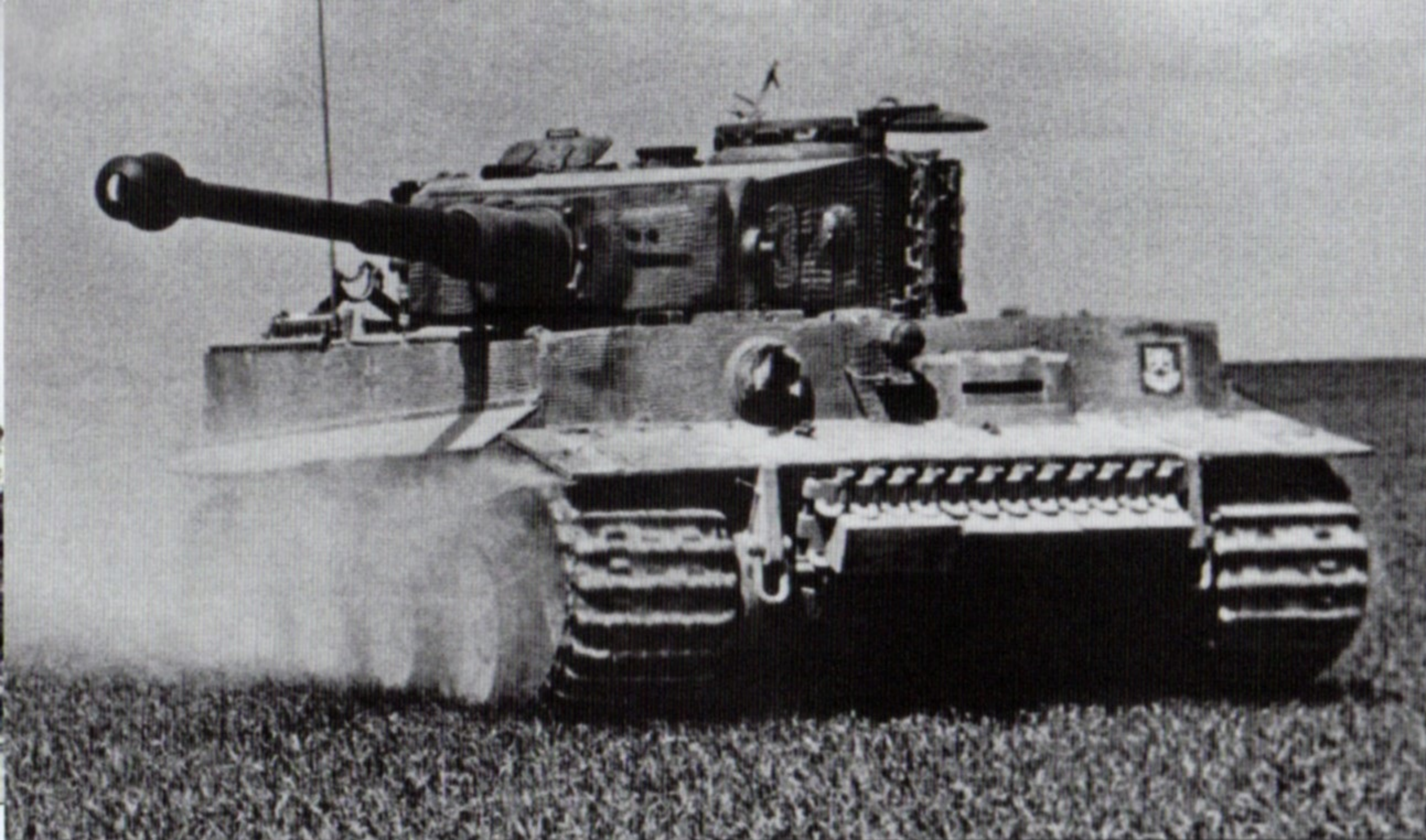
On 7 June 1944, Tigers of the 2nd Company of schwere SS Panzer Abteilung 101 slowly climb Route 316 *en route* to Morgny, Normandy. Visible on the tank in the foreground are the large, circular escape hatch on the turret, an MG-34 mounted on the cupola, steel-rimmed bogie wheels, and, at the far left, the base of the jack. (Patton Museum)



SS-Hauptscharführer Hermann Barkhausen is in the cupola of Tiger tactical number 323 of schwere SS Panzer Abteilung 101 as it rolls toward Normandy. There is a single headlight to the front of the driver's hatch. The commander's cupola door swings laterally on a pivot when opened. (Patton Museum)

The remains of Tiger number 311 of schwere SS Panzer Abteilung 101, stand on Hill 112 in Normandy. The turret was blown off the hull, and all that remains of the rubber tires is white residue around the bottoms of the early-type bogie wheels. The heat of the ensuing fire apparently collapsed the torsion bars of the suspension. (Patton Museum)





Tiger 321 of schwere SS Panzer Abteilung 101 advances across a dusty field in Normandy. The insignia of 1 SS Panzer Korps is painted on a dark, smooth area surrounded by Zimmerit. The travel lock for the 88mm gun is visible on the rear deck. What appear to be three boxes are wedged between the guides of the spare tracks. (Patton Museum)

On a road near Tilly-Sur-Seulles, Normandy, during Operation Epsom on 28 June 1944, Tommies of the Durham Light Infantry, 49th (West Riding) Division, take cover near a knocked-out German Tiger I, tactical number 334, which had been commanded by Oberscharführer Rolf von Westerhagen of schwere SS Panzer Abteilung 101.



The curved side-hull plate above the front tow shackle is visible in profile on this Tiger I of schwere SS Panzer Abteilung 101. This design revision dating from December 1943 allowed better clearance for the shackle and tow hook. It replaced the earlier design wherein the front edge of the side plate was straight above the tow shackle.

This Tiger I of schwere SS Panzer Abteilung 101 was abandoned in Marles, France, on 30 August 1944. It was a mid-production Tiger, featuring a late-type cupola, rubber-tired road wheels, travel lock, and a single, centrally located headlight. The Zimmerit was applied very expertly. To the left, GIs discuss the captured vehicle. (Patton Museum)



Schwere Panzer Abteilung 503



Tiger 133 of the 1st Company, schwere SS Panzer Abteilung 101, passes through the village of Morgny, Normandy on 7 June 1944, one day after D-day. The commander was SS-Oberscharführer Fritz Zahner. In the foreground is an amphibious Schwimmwagen. The camouflage was sprayed on in rather random patterns.



On 12 August 1944, a Tiger, tactical number 213, of schwere Panzer Abteilung 503 rolls through Bourghéroulde, France. The crew was attempting to reach the Seine River crossing at Elbeuf in order to escape the rapidly closing Allied forces west of the river. Previously, this battalion had served on the Eastern Front.





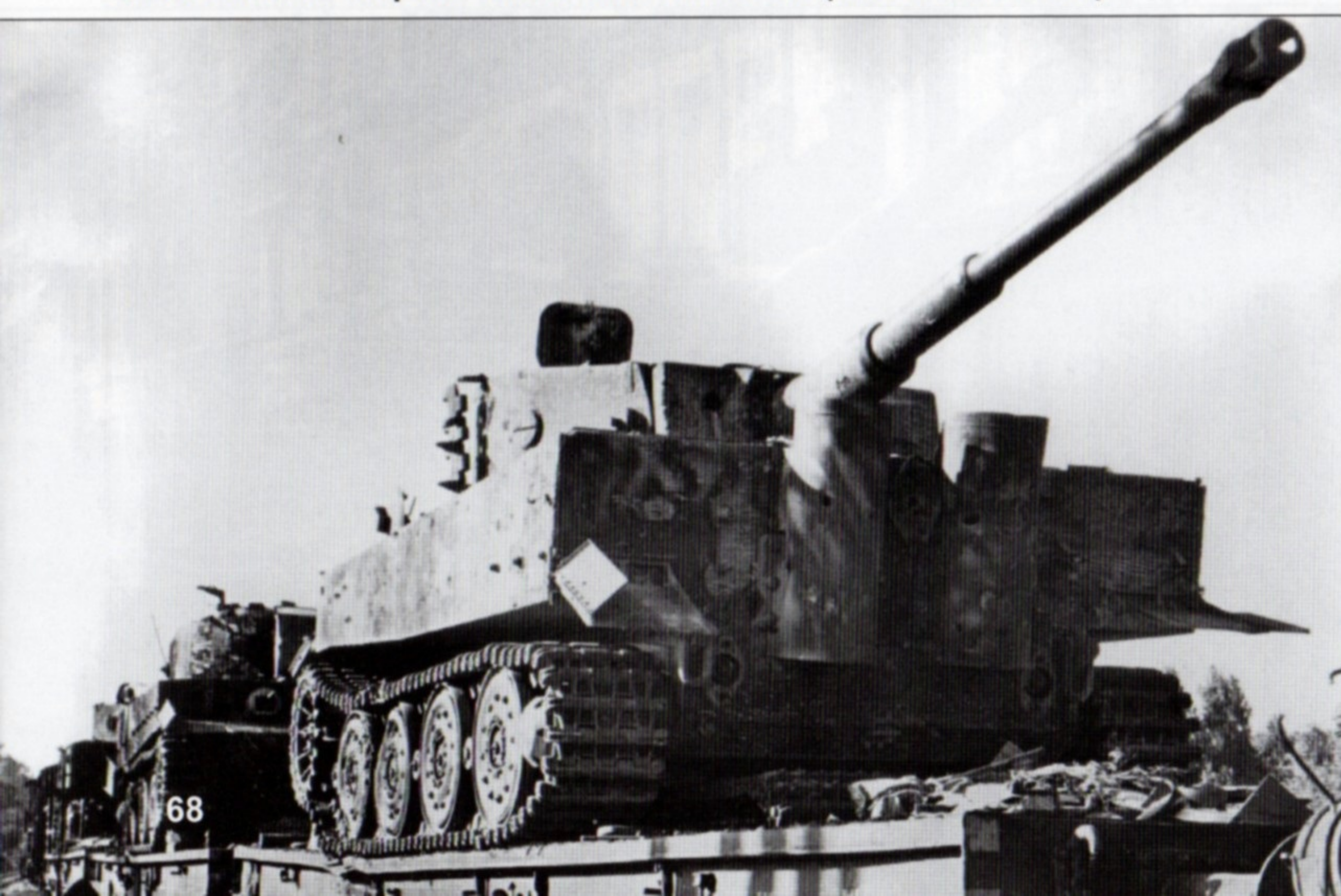
This Tiger I of the 3rd Company of schwere Panzer Abteilung 503, tactical number 313, was destroyed at the company's assembly area at Maneville, Normandy, during Allied carpet bombing preceding Operation Goodwood in Normandy on 18 July 1944. Only two crewmen, including the commander, Oberfeldwebel Sachs, survived.

The three Tigers captured at Reims were configured for rail transport, with transport tracks installed, side mud guards removed, front and rear mud guard extensions raised, and the operational tracks stowed under the vehicles, but no wooden blocks were used to hold the tanks in place should their brakes fail. (Armor Plate Press)



This train, including three Tiger tanks the Germans were attempting to transport to the rear for repairs, was captured by the Americans at Reims, France, on 31 August 1944. There was one tank per flatcar, with the closest Tiger having its rear and turret facing to the front. (Armor Plate Press)

French Resistance men examine the first Tiger on the flatcars captured at Reims. There are numerous bullet holes in the muffler shields and turret stowage box, and the large gouges from shells toward the front of the hull. Evidence suggests that the three Tigers captured at Reims belonged to schwere Panzer Abteilung 503. (Armor Plate Press)



Kompanie Hummel (4 Kp/schwere Panzer Abteilung 506)



The first T26E3s committed to combat were accompanied by the Zebra Mission, a team of U.S. armor and arms specialists who monitored and analyzed the performance of new weapons in early 1945. Mission members eagerly observed the effects of the Pershing's 90mm gun on enemy tanks, including the Tiger destroyed in Elsdorf. (Patton Museum)

In late February 1945, a T26E3 Pershing tank knocked out a Tiger I in Elsdorf, Germany. The Pershing scored four 90mm hits on the Tiger, including a shot that passed through the bottom of the mantlet (indicated by a white arrow) and into the turret, touching off an explosion inside the tank. (Patton Museum)



L. R. "Slim" Price (left), a representative from Aberdeen Proving Ground and an expert on the Pershing's 90mm gun, stands with the commander of the Pershing tank that knocked out the Tiger I in Elsdorf. Near the bottom of the mantlet, between the commander's head and the 88mm gun, is the entry hole of the 90mm projectile. (Patton Museum)

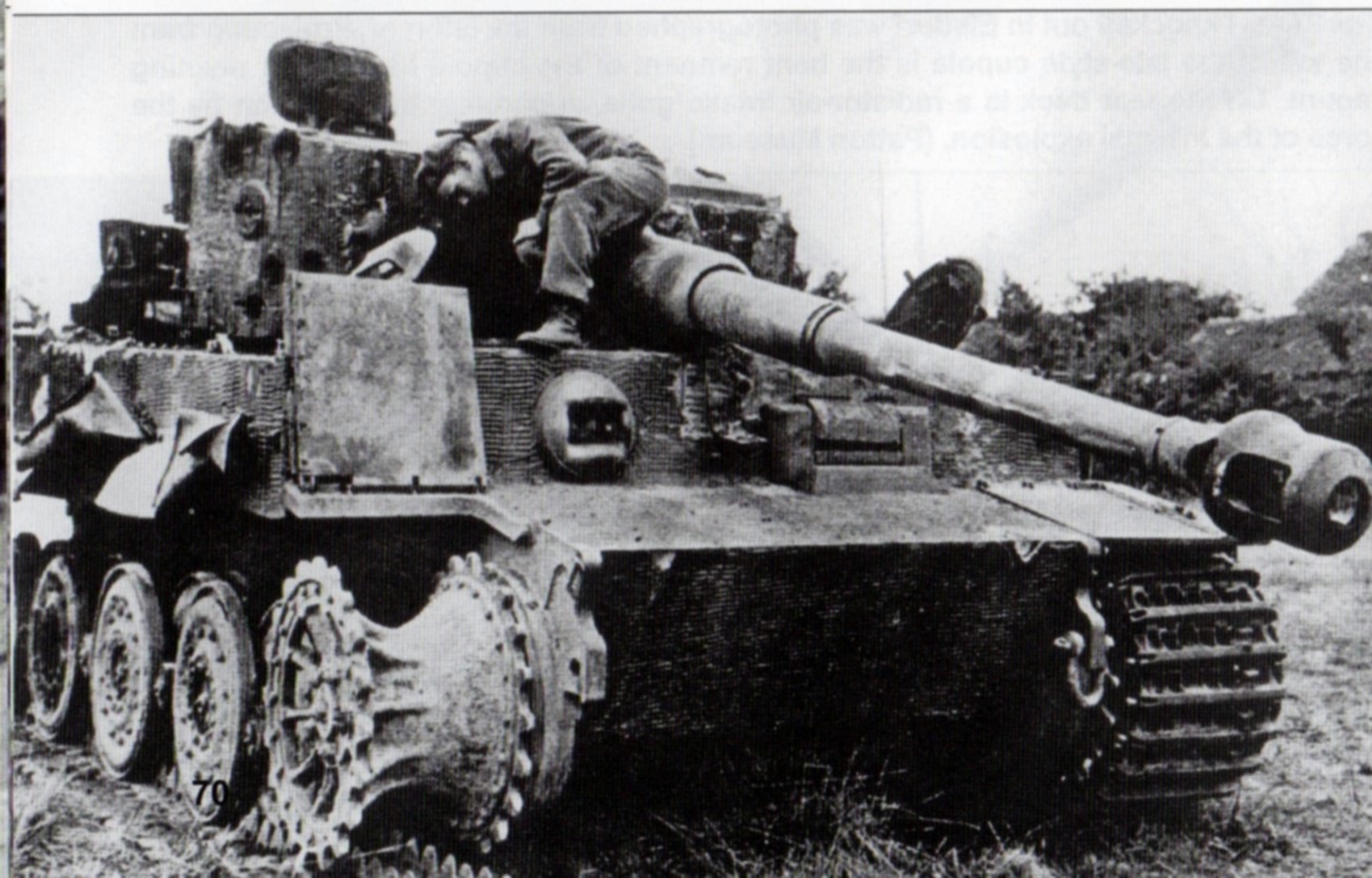
The Tiger I knocked out in Elsdorf was photographed from the left rear. Projecting from the top of the late-style cupola is the bent remnant of the cupola hatch door pivoting mount. On the rear deck is a radiator-air intake grille, apparently thrown open by the force of the internal explosion. (Patton Museum)





On the night of 26 February 1945, this Tiger of Panzer-Kompanie Hummel knocked out a U.S. T26E3 Pershing tank of Task Force Lovelady, 3rd Armored Division, in Elsdorf, Germany. After making the kill, the Tiger got stuck in building debris and its crew abandoned it. GIs survey the abandoned vehicle. (Patton Museum)

The British captured this late-production Tiger I in Normandy in 1944 and used it in firing tests to analyze the ability of the 17-pounder gun to penetrate the Tiger's armor. On the side of the turret are several penetrations. A round failed to penetrate the frontal plate between the front machine gun and driver's visor. (Patton Museum)



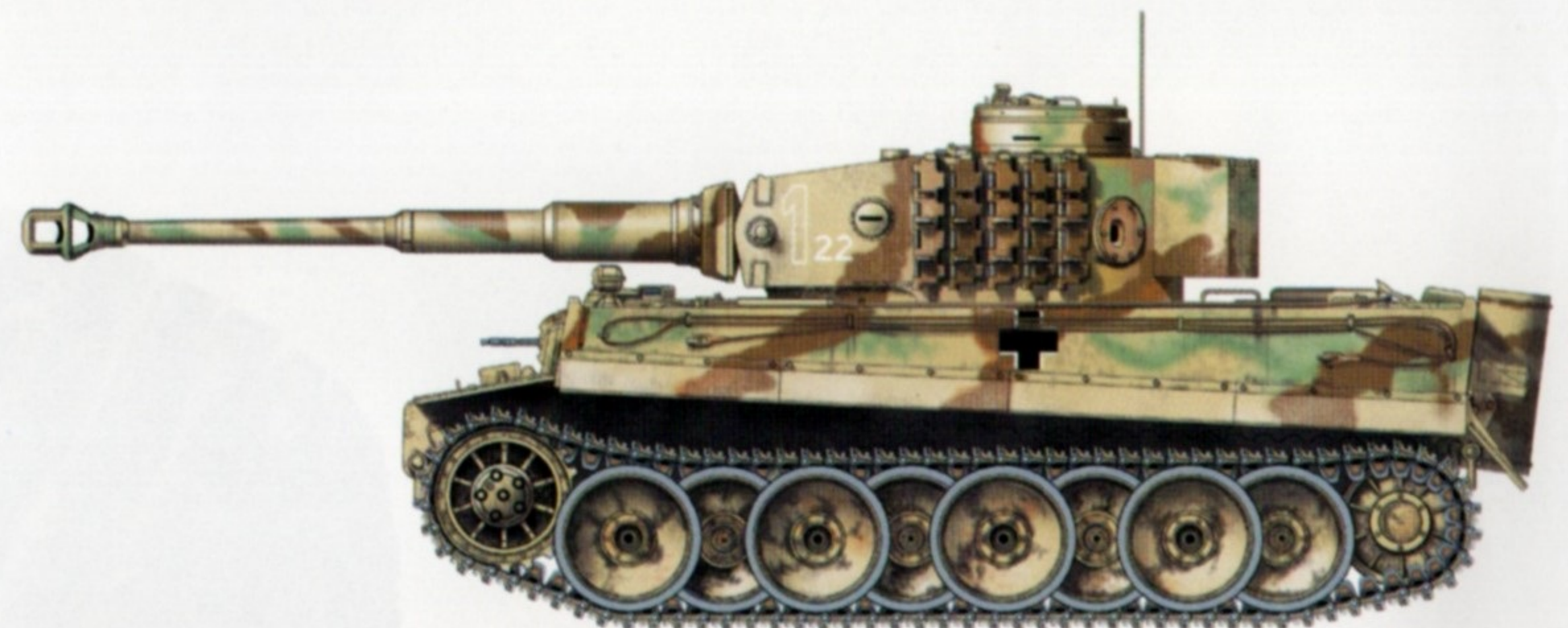
Two American mortar observers operate next to a knocked-out Tiger I, number 411, of schwere Panzer-Kompanie Hummel in Oberwampach, Luxembourg, in January 1945. This company fielded reconditioned Tigers that sometimes exhibited a mix of early- and late-production components. The barrel sleeve has been blown off. (National Archives)

At Brachelen, Germany, in February 1945, this Tiger I went over an embankment and landed upside-down. Next to the tank are the remnants of a destroyed bridge, and the American troops walking on the tank's track appear to be using the vehicle as a convenient footbridge to cross to the other side. (Armor Plate Press).





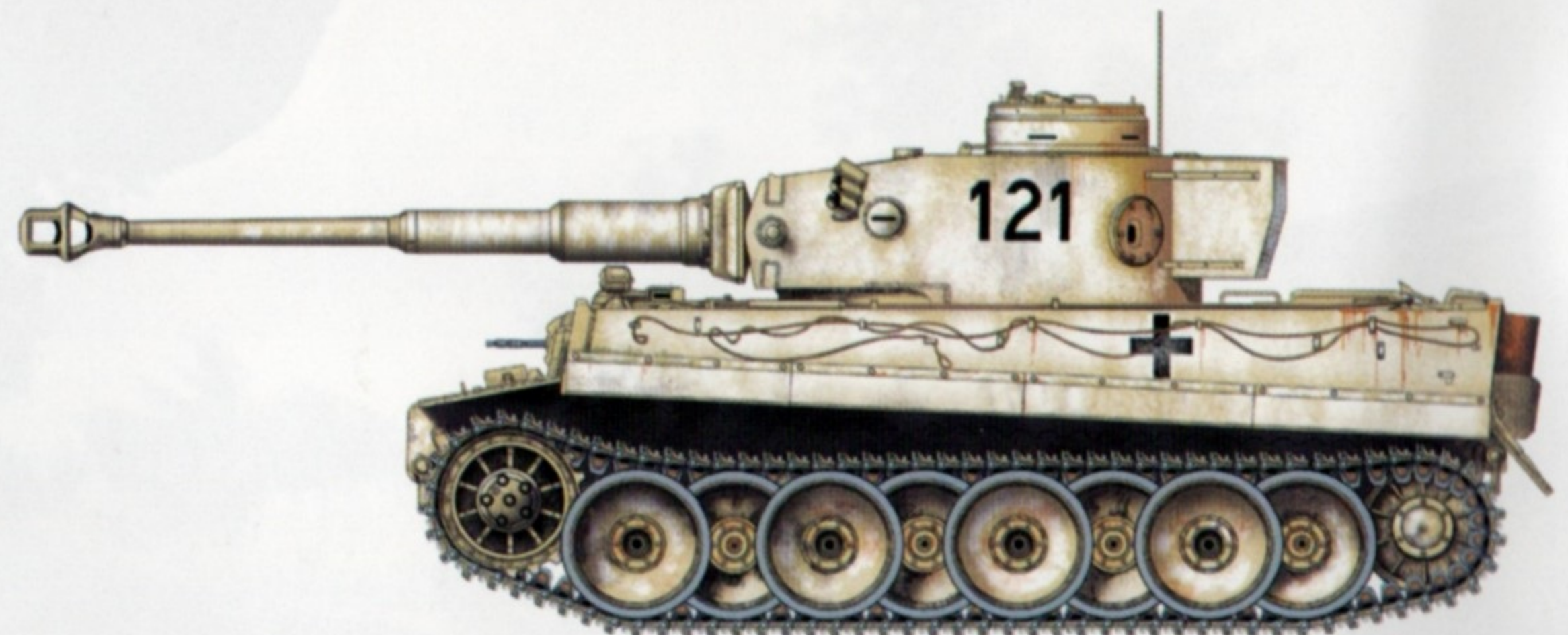
This Tiger was assigned to the Commander of the 1st Platoon, 1st Company, sPzAbt. 501 in Tunisia. Each platoon was assigned two Tigers and two Panzer III tanks. These tanks were painted olive drab, which may have come from captured U.S. paint stocks.



During the 1943 campaign in Italy, this Tiger from 2nd Platoon, 1st Company, sPzAbt. 508 wore this camouflage scheme of field-applied RAL 6003 green and RAL 8017 brown over the factory-applied base color of RAL 7028 dark yellow.



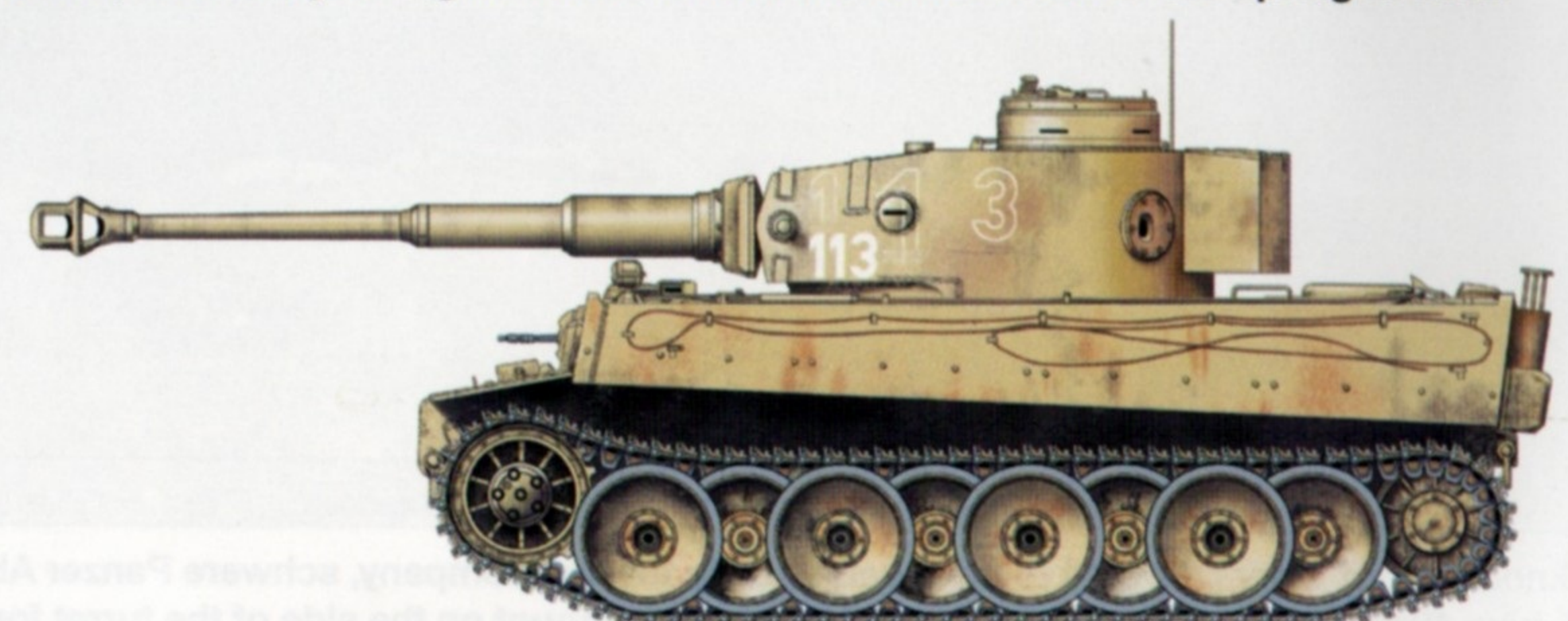
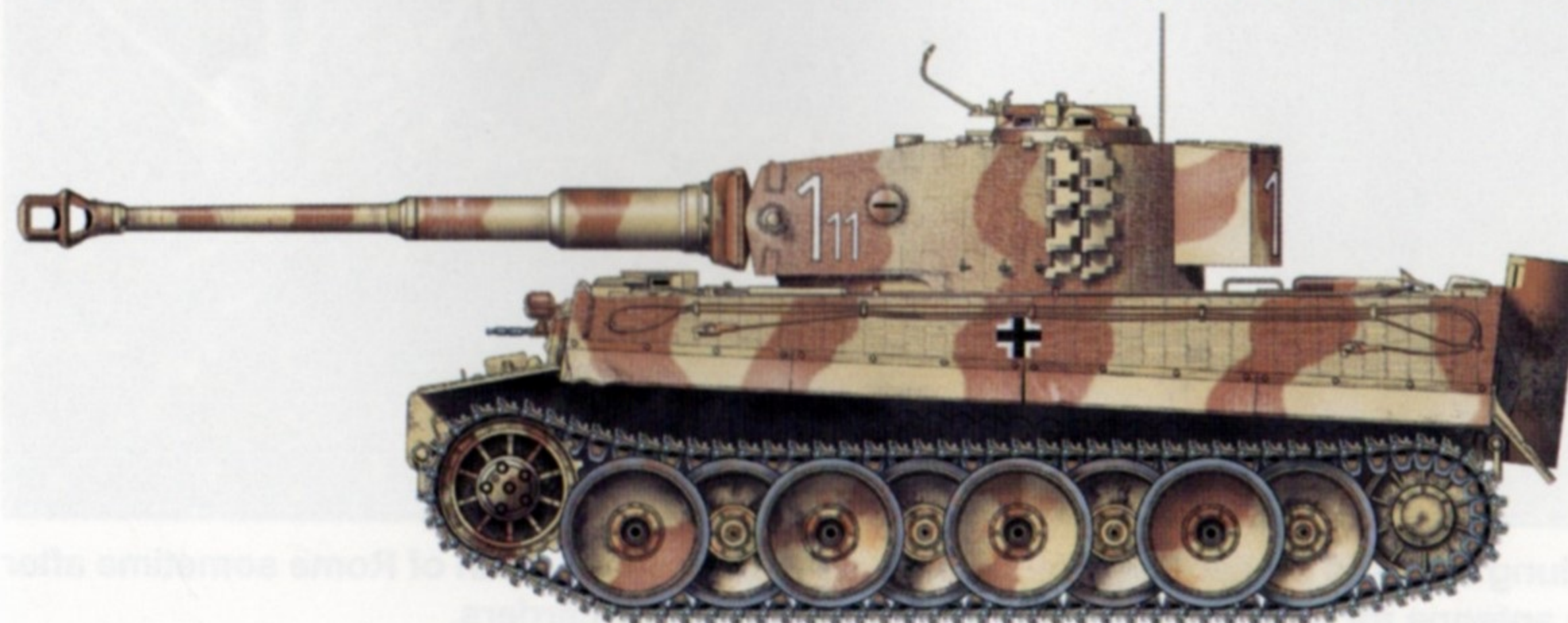
This Tiger was commanded by then SS-Obersturmführer Michael Wittmann during the battle at Villers-Bocage, in Normandy, France, on 13 June 1944.



This 3rd Platoon, 1st Company, sPzAbt. 503 Tiger was knocked out 15 March 1944 near Skalat, in the western Ukraine.

This Tiger is typical of those used by the 1st Company sPzAbt. 507, one of the top Tiger units in the East. The unit accounted for more than 500 destroyed Soviet tanks.

Assigned to sPzAbt. 502, this tank was originally numbered 113, then renumbered 3, then 4, and finally 113 again. It was lost on the Eastern Front in the spring of 1944.





A knocked-out Tiger I thought to have belonged to the 3rd Company, schwere Panzer Abteilung 508, sits precariously on its side along Highway 6 north of Rome sometime after 13 June 1944. Close inspection of the photo reveals a mount on the side of the turret for an antenna for remotely controlling demolition-charge carriers.

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